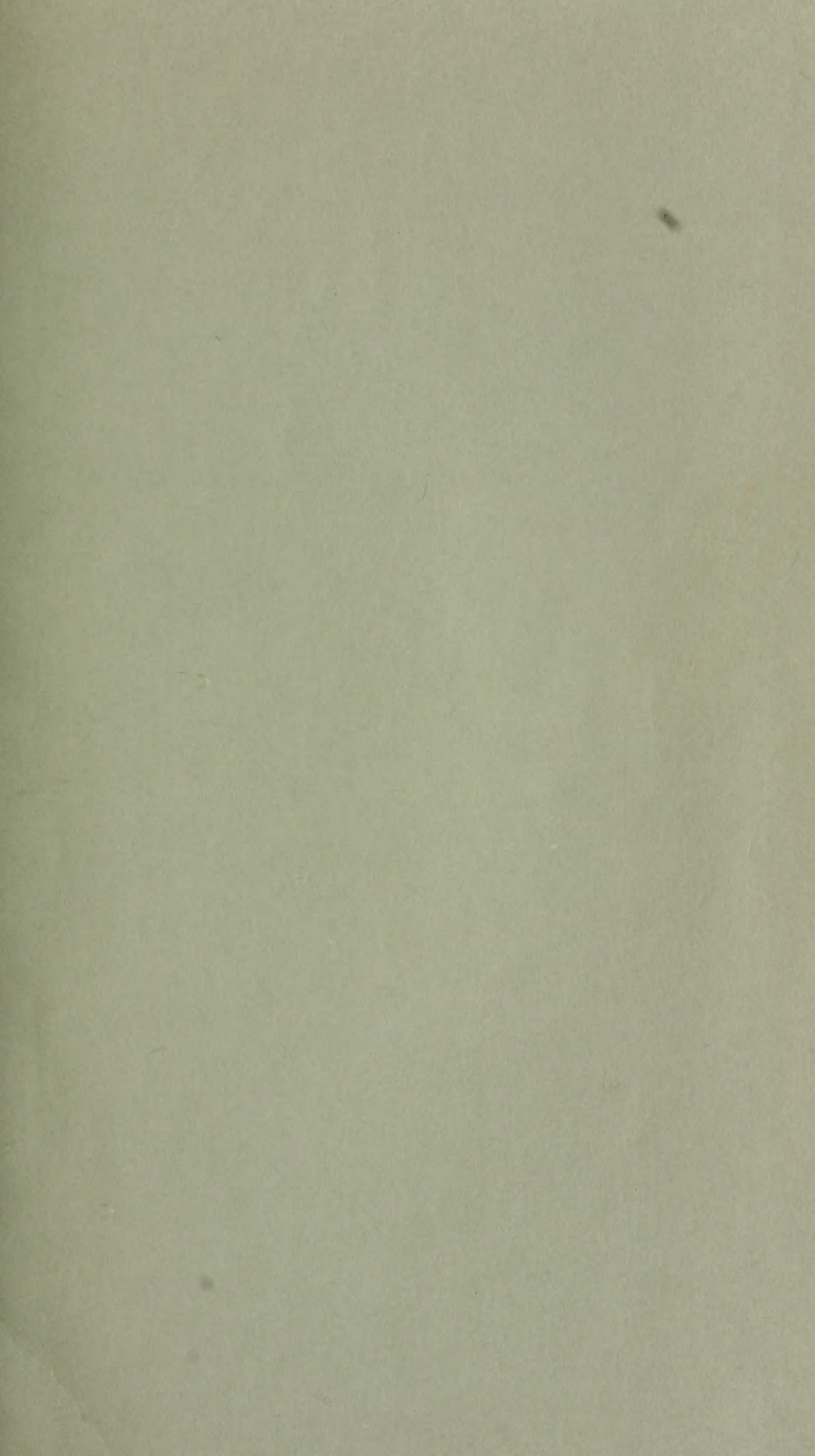


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Founded in 1832

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Issued Quarterly

No. 2

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GETTYSBURG, PA.

CALENDAR FOR 1918-1919-1920

Session days are indicated by bold-face type.

1918.

September							October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	1	2	1	2	3	4	5	6	7
8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
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22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
29	30	27	28	29	30	31	24	25	26	27	28	29	30	29	30	31

1919.

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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12	13	14	15	16	17	18	9	10	11	12	13	14	15	9	10	11	12	13	14	15	13	14	15	16	17	18	19
19	20	21	22	23	24	25	16	17	18	19	20	21	22	16	17	18	19	20	21	22	20	21	22	23	24	25	26
26	27	28	29	30	31	..	23	24	25	26	27	28	..	23	24	25	26	27	28	29	27	28	29	30
..	30	31
May							June							July							August						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23
25	26	27	28	29	30	31	29	30	27	28	29	30	31	24	25	26	27	28	29	30
..	31
September							October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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14	15	16	17	18	19	20	12	13	14	15	16	17	18	9	10	11	12	13	14	15	14	15	16	17	18	19	20
21	22	23	24	25	26	27	19	20	21	22	23	24	25	16	17	18	19	20	21	22	21	22	23	24	25	26	27
28	29	30	26	27	28	29	30	31	..	23	24	25	26	27	28	29	28	29	30	31
..	30

1920.

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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11	12	13	14	15	16	17	15	16	17	18	19	20	21	14	15	16	17	18	19	20	11	12	13	14	15	16	17
18	19	20	21	22	23	24	22	23	24	25	26	27	28	21	22	23	24	25	26	27	18	19	20	21	22	23	24
25	26	27	28	29	30	31	29	..	..	..	..	..	..	28	29	30	31	..	..	..	25	26	27	28	29	30	..
May							June							July							August						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	1	..	..	1	2	3	4	5	..	..	..	1	2	3	..	1	2	3	4	5	6	7	
2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14
9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21
16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28
23	24	25	26	27	28	29	27	28	29	30	..	..	..	25	26	27	28	29	30	31	29	30	31	..	..	..	..
30	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

COLLEGE CALENDAR—1918-1919-1920

1918.

September 16, 17.... Monday and Tuesday, Entrance Examinations.
 September 18..... Wednesday, 11 A. M., College Year begins.
 September 18..... Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 28..... Thanksgiving Day. Holiday.
 December 9..... Monday, 1.30 P. M., Mid-Winter Meeting of
 Board of Trustees in Harrisburg.
 December 18 Wednesday, Noon. Christmas Recess begins.

1919.

January 3..... Friday, 8 A. M., Christmas Recess ends.
 February 22..... Washington's Birthday. Holiday.
 April 7..... Founders' Day.
 April 17..... Thursday, 1 P. M., Easter Recess begins.
 April 22..... Tuesday, 8 A. M., Easter Recess ends.
 May 20..... Tuesday, Latin Examination for Hassler Prize.
 May 26 to 29..... Monday to Thursday, Senior Final Examinations.
 May 30..... Decoration Day. Holiday.
 May 28 to Tuesday to Monday, General Final Examinations.
 June 9..... Sunday, 10.45 A. M., Baccalaureate Sermon.
 June 8..... Sunday, 7 P. M., Discourse before Y. M. C. A.
 June 9..... Monday, 8 P. M., Concert by Combined Musical Clubs in Brua Chapel.
 June 9, 10..... Monday and Tuesday, Entrance Examinations.
 June 10..... Tuesday, 9 A. M., Annual Meeting of Board of Trustees in Gettysburg.
 June 10..... Tuesday, 10 A. M., Senior Class Day Exercises.
 June 10..... Tuesday, 3 P. M., Alumni Class Reunions.
 June 10..... Tuesday, 4 P. M., Baseball Game on Nixon Field.
 June 11..... Wednesday, 10 A. M., Commencement Exercises.
 June 11..... Wednesday, Noon, Alumni Collation.

Summer Vacation.

August 26 Tuesday, 8 A. M., Course in Surveying Begins.
 September 15, 16.... Monday and Tuesday, Entrance Examinations.
 September 17..... Wednesday, 11 A. M., College Year begins.
 September 17..... Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 27..... Thanksgiving Day. Holiday.
 December 8..... Monday, 1.30 P. M., Mid-Winter Meeting of
 Board of Trustees in Harrisburg.
 December 23..... Tuesday, 5 P. M., Christmas Recess begins.

1920.

January 6..... Tuesday, 8 A. M., Christmas Recess ends.
 January 26..... Monday to Saturday, Examinations closing
 January 31..... First Semester.
 January 31..... Saturday, Noon, First Semester ends and Second Semester begins.
 April 1..... Thursday, Noon, Easter Recess begins.
 April 7..... Wednesday, 8 A. M., Easter Recess ends.
 June 9..... Wednesday, Commencement.

HISTORICAL.

The Charter of Pennsylvania College was approved April 7, 1832. The opening paragraphs are as follows:

"WHEREAS, the literary and scientific institution in Gettysburg, Adams County, in this Commonwealth, known by the name of Gettysburg Gymnasium, is resorted to by a large number of young men from different portions of this State, and elsewhere, and promises to exert a salutary influence in advancing the cause of liberal education; therefore,

"SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, That the Gettysburg Gymnasium be, and hereby is erected into a College, for the education of youth in the learned languages, the arts, sciences and useful literature.

"SECTION 2. And be it further enacted by the authority aforesaid, That the style and title of said College shall be 'Pennsylvania College of Gettysburg' and that it shall be under the management, direction and government of all the subscribers to the funds of said institution, by whose private contributions the said funds have been raised and its present edifice purchased, to wit: John B. McPherson, Thomas C. Miller, Thomas J. Cooper, Samuel Fahnestock, Samuel S. Schmucker, Ernest L. Hazellius, David F. Schaeffer, John G. Morris, Benjamin Kurtz, William Heim, Charles P. Krauth, Frederick D. Schaeffer, J. George Schmucker, J. F. Heyer, Jacob Martin, Abraham Reck, William Ernst, Jacob Medtard, Lewis Eichelberger, Michael Meyerheffer, Jonathan Ruthrauff, Jacob Crigler, John F. Macfarlane, Robert Goodloe

Harper, John Herbst, and their successors, to be elected as hereinafter mentioned."

In SECTION 4 we read: "And at elections either for patrons, or trustees, or teachers, or other officers, and in the reception of pupils, no person shall be rejected on account of his conscientious persuasion in matters of religion, provided he shall demean himself in a sober manner, and conform to the rules and regulations of the College."

The College in a large measure grew out of the necessity of properly preparing men for the Theological Seminary, established in 1826 at Gettysburg. This purpose has never lessened, and to-day the institution regards this is an important feature of its work and offers special opportunities to young men preparing themselves for theological studies. Pennsylvania College in its beginnings and its history is closely identified with the Lutheran Church.

Among the founders of the College special mention should be made of S. S. Schmucker, D.D., Professor in the Theological Seminary at Gettysburg, who was the directing spirit in changing the Gettysburg Gymnasium into a College and who presided unofficially over the College for two years. In the State Legislature were a number of friends of the College, prominent among them being Thaddeus Stevens, the father of the public school system of Pennsylvania. Several appropriations were made to the College by the Legislature. This money was spent in the erection of the building known as Pennsylvania Hall.

The College began without endowment, with one small building (now a residence on the south-east corner of Washington and High streets), and a small attendance. But the wholesome enthusiasm of its able instructors, the loyalty and self-sacrifice of its officers, students, and

alumni, and the devotion of its friends, have made its history down to the very present one of steady and continuous growth. To-day Pennsylvania College is rated as a college of the highest grade by the United States Bureau of Education and the New York State Board of Regents. Her graduates are admitted to all graduate and professional schools without examination.

Following is a list of the Presidents of the College from its foundation to the present time:

1832-34, Samuel S. Schmucker, D.D., Founder.

1834-50, Charles Philip Krauth, D.D., First President.

1850-68, Henry L. Baugher, D.D., Second President.

1868-84, Milton Valentine, D.D., LL.D., Third President.

1884-1904, Harvey W. McKnight, D.D., LL.D., Fourth President.

1904-10, Samuel G. Hefelbower, Ph.D., D.D., Fifth President.

1910-, William A. Granville, Ph.D., LL.D., Sixth President.

LOCATION.

Gettysburg is situated in the beautiful rolling area of the red shale belt of Pennsylvania, with its ridges of intrusive rock. A few miles west is the South Mountain ridge of the Blue Mountains. The situation is healthful, and there is a good supply of filtered water. The town is readily reached from all directions by the Philadelphia & Reading and the Western Maryland Railways, which connect at Harrisburg, Pa., and Baltimore, Md., with the great railway systems of Pennsylvania and the South. Washington, Baltimore, Harrisburg, York, Hagerstown, Chambersburg, Carlisle, and other important centers are also connected with Gettysburg by unusually good roads, making it a very important automobile tourist center. The Coast to Coast Lincoln Way passes through Gettysburg.

The historic association of Gettysburg with the Civil War gives the locality great additional interest. The events of the Battle of Gettysburg are recorded in inscriptions on about fourteen hundred monuments and one thousand markers, many of these being of large size and of great artistic merit. The United States Battlefield Commission has made the field accessible by over forty miles of very fine avenues, along which are the markings that show the battle lines. Miles of the rifle pits and other intrenchments have been preserved, as well as scores of lunettes. Here also is the National Cemetery where Lincoln made his memorable dedicatory speech. Among the thousands of travelers visiting the field are many men of national prominence who often speak to the student body. Such surroundings develop a love of our united country and inspire to better citizenship.

The college buildings were all used as hospitals during and after the Battle of Gettysburg; and the Fiftieth Anniversary of the Battle of Gettysburg Commission had its headquarters on the campus, July 1-4, 1913.

BOARD OF TRUSTEES.

Elected.

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1890.	WILLIAM H. DUNBAR, D.D.*.....	Baltimore, Md.
1892.	THOMAS C. BILLHEIMER, D.D.*.....	Gettysburg
1893.	JOHN WAGNER, D.D.*.....	Hazleton
1896.	JOHN B. McPHERSON, ESQ.....	Boston, Mass.
1897.	WILLIAM A. SHIPMAN, D.D.*.....	Johnstown
1898.	HENRY C. PICKING.....	Gettysburg
1899.	CHARLES F. STIFEL.....	Pittsburgh
1899.	HENRY H. WEBER, D.D.....	York
1902.	CHARLES BAUM, M.D., Ph.D.....	Philadelphia
1906.	SAMUEL G. HEFELBOWER, Ph.D., D.D....	Topeka, Kan.
1907.	MARTIN H. BUEHLER.....	Baltimore, Md.
1907.	HON R. WILLIAM BREAM.....	Gettysburg
1907.	FREDERICK H. BLOOMHARDT, M.D.....	Altoona
1907.	ALPHEUS EDWIN WAGNER, D.D.....	Gettysburg
1908.	WILLIAM J. GIES, Ph.D., Sc.D.*.....	New York, N. Y.
1908.	WILLIAM L. GLATFELTER.....	Spring Grove
1908.	FRANK E. COLVIN, ESQ.....	Bedford
1908.	JOHN F. DAPP.....	Harrisburg
1908.	GEORGE B. KUNKEL, M.D.....	Harrisburg
1908.	JACOB A. CLUTZ, D.D.....	Gettysburg
1910.	WILLIAM A. GRANVILLE, Ph.D., LL.D.....	Gettysburg
1910.	CHARLES J. FITE.....	Pittsburgh
1910.	BURTON F. BLOUGH.....	Harrisburg
1912.	CHARLES H. BOYER.....	Chicago, Ill.
1913.	HON. LUTHER A. BREWER.....	Cedar Rapids, Ia.
1914.	FREDERICK H. KNUBEL, D.D.....	New York, N. Y.
1914.	PERCEY D. HOOVER, M.D.....	Waynesboro
1915.	LESLIE M. KAUFFMAN, M.D.....	Kauffman's
1915.	HARVEY C. MILLER.....	Philadelphia
1916.	JOHN B. McALISTER, M.D.....	Harrisburg
1916.	MARION J. KLINE, D.D.....	Altoona
1917.	JEREMIAH ZIMMERMAN, D.D., LL.D.,...	Syracuse, N. Y.
1918.	LOUIS S. WEAVER, M.D.....	York

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HON. SAMUEL McC. SWOPE.....	Vice President
HENRY C. PICKING.....	Secretary and Treasurer

*Designated as Alumni Trustees, having been elected on nomination by the Alumni Association.

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	Term Expires
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THOMAS C. BILLHEIMER, D.D.....	1919
HENRY C. PICKING.....	1923
JACOB A. CLUTZ, D.D.....	1922
WILLIAM L. GLATFELTER.....	1921
JOHN F. DAPP	Ex-officio
WILLIAM A. GRANVILLE, Ph.D., LL.D.....	Ex-officio

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Student Assistant in Physics Laboratory
Room 245 McK.

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Room 304 G. A.

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Secretary to the President

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15

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Proctor in Cottage Hall

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Custodian of Reading Room

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48 Stevens St

MRS. S. FRANKLIN WETZEL
Matron in Gettysburg Academy
48 Stevens St.

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Janitor
4 Campus

MERVE CARVER
Janitor
4 Campus

MRS. M. S. YOHE
Janitress
207 Chambersburg St.

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PROFESSOR SANDERS, Junior Class
PROFESSOR PARSONS, Sophomore Class
PROFESSOR BREIDENBAUGH, Freshman Class

Entrance.

BIKLE, GRIMM, WILLIAMS, CLUTZ, STOVER

Library.

GRIMM, GRANVILLE

Bulletin.

HAGEN, PARSONS, EWING, FUNDENBURG
GRANVILLE, Ex-officio

Hour Schedule.

BREIDENBAUGH, GRIMM

Students' Publications.

SANDERS, HAGEN, VALENTINE

Supervision of Finance of Student Organizations.

EWING, SANDERS, STAHLEY

College Discipline.

VALENTINE, BIKLE, STAHLEY, SANDERS, PARSONS

Lectures.

BIKLE, EWING, ROSENSTENGEL

Advanced Degrees.

GRIMM, BIKLE, STAHLEY

Representative on Athletic Council.

WILLIAMS

Supervision of Social Functions.

BILLHEIMER, BIKLE

Student Employment.

GRANVILLE, SNYDER

Student Organizations.

BREIDENBAUGH, FUNDENBURG, ROSENSTENGEL

Dormitory Rooms.

PARSONS, PICKING, STOVER

Supervision of Musical Clubs.

CLUTZ

Electric Service.

ROSENSTENGEL, PARSONS, WILLIAMS

PENNSYLVANIA COLLEGE

ATHLETIC COUNCIL.

W. L. G. WILLIAMS

Faculty Representative, President

DOYLE REVERE LEATHERS, '13

Athletic Director, Vice-President

SAMUEL F. SNYDER, '09

Graduate Athletic Manager, Secretary

ARTHUR E. RICE, '04

Alumni Representative, Treasurer

GEORGE W. NICELY, '01

Alumni Representative

FELIX G. ROBINSON, '20

Student Representative

EARL K. STOCK, '19

Ex-officio, President of the College Athletic Association

JOHN F. DAPP, ex-'89

Ex-officio, President of the Board of Trustees

WILLIAM A. GRANVILLE

Ex-officio, President of the College

STUDENT COUNCIL 1918-19.

DONALD F. LYBARGER, '19

President

MARTIN L. FAUST, '19

Vice-President

HARRY W. SLANKER, '20

Recording Secretary

STUDENT COUNCIL

19

CLARENCE A. NEAL, '20
Corresponding Secretary

EARL K. STOCK, '19
Treasurer

JOHN BRENNEMAN, '22
Messenger

WILLIAM T. SIEBER, '19

HENRY W. STERNAT, '20

SAMUEL S. SHAULIS, '21

JOHN R. HOUSER, '21

ADMISSION.

Applicants for admission are required to present evidence of a good moral character. Students coming from other schools must present certificates of good standing and regular dismissal from the institutions which they have left. No distinctions are made as to sex, except that only male students are admitted to the college dormitories. Women students may secure first-class accommodations in the town with good families and at very reasonable rates by writing to the Registrar.

METHOD OF ADMISSION.

The method of admission is either by examinations or by certificates from approved secondary and high schools or from private instructors. Such certificates should state the amount of work done and the time spent on each subject, together with the grades received. *The official forms for certificates,** which may be had on application to the Registrar, *should be used in all cases*, in order to insure the presentation of the necessary information for the Entrance Committee which passes on all applications for admission. These certificates should be filled out and returned to the Registrar as early as possible before the opening of the college year. Entrance examinations are held on the Monday and Tuesday preceding the opening of the college year and on the Monday and Tuesday of Commencement Week.

REGISTRATION.

Every student who desires to register at Pennsylvania College should call on the Registrar before or at the opening of College, pay the Registration Fee of \$5.00, be informed as to the action of the Entrance Committee, receive registration blanks, and be instructed in the man-

* A copy of this blank has been bound into this Bulletin inside of the front cover for the convenience of applicants. Detach it along the perforations, fill it out and send it to the Registrar.

ner of filling them out. He should arrange his course of study under the guidance of his Group Adviser. He should also submit his schedule of studies, properly endorsed by the Group Adviser, to the Registrar within one week from the opening of College.

REQUIREMENTS FOR ADMISSION.

The scholarship requirement for admission to the Freshman Class is thoro preparation in fifteen units of work in an approved secondary school. A *unit* of work in any subject is the amount of work that may be done in a standard secondary school in a year of thirty-six weeks, with five recitation periods of forty-five minutes each, per week.

PRESCRIBED SUBJECTS FOR ADMISSION.

Of these fifteen units required for admission, the following *five and a half* are required of all candidates:

- English3* units
- Mathematics
 - A. Algebra1½ units
 - B. Plane Geometry1 unit

ELECTIVE SUBJECTS FOR ADMISSION.

To make up the total of fifteen units the candidate for admission may offer any of the following (under the conditions stated in connection with each Group of College studies, pages 32-58) :

Greek.

- A. Grammar and four books of Xenophon.....2 units
- B. Composition, three books of Homer, and sight translation1 unit.

Latin.

- A. Grammar and four books of Caesar2 units.
- B. Composition and six books of Cicero1 unit.
- C. Six books of Vergil1 unit.

German.

- One to three years1 to 3 units.

* As the first English work in the high school or preparatory school course is largely grammar, the credit granted in English is one unit less than the number of years of work in this subject.

French.

One to three years 1 to 3 units.

Spanish.

One to three years 1 to 3 units.

Mathematics.C. Solid Geometry $\frac{1}{2}$ unit.D. Plane Trigonometry $\frac{1}{2}$ unit.**Mechanical Drawing.**One year $\frac{1}{2}$ or 1 unit.**History.**United States $\frac{1}{2}$ or 1 unit.England $\frac{1}{2}$ or 1 unit.Ancient $\frac{1}{2}$ or 1 unit.Medieval $\frac{1}{2}$ or 1 unit.**Geography, Political and Physical** $\frac{1}{2}$ or 1 unit.**Chemistry.**

One year with laboratory work 1 unit.

One year without laboratory work $\frac{1}{2}$ unit.**Physics.**

One year with laboratory work 1 unit.

One year without laboratory work $\frac{1}{2}$ unit.**Botany.**

One year with laboratory work 1 unit.

One year without laboratory work $\frac{1}{2}$ unit.**Zoölogy.**

One year with laboratory work 1 unit.

One year without laboratory work $\frac{1}{2}$ unit.

Three units of German are no longer required for entrance to Group I. Instead of three units of German a candidate may offer three units in either French or Spanish. Or, he may offer two units of any one of the three languages and a single unit of any other.

Single units will be accepted in French, Spanish, or German to make up the total Modern Language entrance requirements for admission to any Group.

ADDITIONAL SUBJECTS.

Certificates will be accepted in Civics, Astronomy, Geology and General Science; also in Commercial Geography and Bookkeeping when offered for admission to the Commerce-Finance Group; also in Manual Training and Shop

Work (to count not more than half a unit in each case) when offered for admission to any of the Engineering Groups.

DEFICIENCY IN ADMISSION.

To receive the full advantage of a college course a student must have a thoro entrance preparation. Those who are insufficiently prepared for the class they enter do not generally make satisfactory progress in their work. Fifteen units of entrance work are required for unconditional admission to the College; but students who lack not more than two units of entrance requirements of any group may register as conditioned freshmen. In such cases the entrance deficiency must be satisfied by enrollment in the Gettysburg Academy or under an approved tutor. Such enrollment must take place at the time of registration in the College. Work thus done in satisfying an entrance deficiency does not give College credit, but does count as part of the current work of the student in estimating the number of hours in which he may be enrolled.

ADMISSION TO ADVANCED STANDING.

A candidate for advanced standing must satisfy the entrance requirements and in addition must submit evidence of the satisfactory character of the work for which advanced credit is asked.

No one is admitted to the College after the beginning of the Senior year except by special action of the Faculty.

PARTIAL COURSE STUDENTS.

Persons so situated that they are not able or do not wish to pursue a course of study leading to a degree, are admitted as partial course students in such subjects as examination may show they are prepared to pursue with advantage. Such students are required to offer for en-

trance not less than eleven units of preparatory work, and their weekly schedule must include not less than fourteen semester hours.

SPECIAL STUDENTS.

Students of the Theological Seminary are admitted to one or more courses in the College.

The Faculty may also admit to one or more courses such applicants as have special qualifications for the subjects they desire to pursue.

HONOR SYSTEM IN EXAMINATIONS.

Every student entering College must sign a statement in the Registrar's office expressly accepting this Honor System. Failing to do so he will be suspended until this requirement is satisfied.

ADMISSION SUBJECTS IN DETAIL.

ENGLISH.

In English the study of the following books, recommended by the National Conference on Uniform Entrance Requirements. This is required for 1919-1920.

A. Reasonable familiarity with the substance of the work:

The following are preferred, tho any of the alternatives specified in the Uniform Entrance Requirements for 1919-1922 are accepted:

Shakespeare's "Merchant of Venice" and "Julius Caesar"; Addison's "Sir Roger de Coverley Papers"; Goldsmith's "Deserted Village"; Scott's "Ivanhoe" and "Lady of the Lake"; George Eliot's "Silas Marner"; Irving's "Sketch Book"; Tennyson's "Gareth and Lynette," "Lancelot and Elaine," and "Passing of Arthur"; Ruskin's "Sesame and Lilies."

B. More careful and specific study:

Shakespeare's "Macbeth"; Milton's "Lycidas"; "Comus," "L'Allegro," and "Il Penseroso"; Washington's "Farewell Address"; Webster's "First Bunker Hill Oration"; Carlyle's "Essay on Burns."

The examination will be in two parts,—one of questions on grammar, rhetoric, and composition, the other of questions on the literature specified above.

In the first part, candidates will be asked specific questions and given particular exercises in word-choice, sentence structure, the principles of paragraphing, and other such matters as a student seeking college standing should be proficient in. The examination in literature will require reasonable familiarity with the books and the authors mentioned under "A" above (or those accepted in substitution for them); and fairly thoro knowledge and appreciation of the books and the authors named under "B" above.

No candidate will be accepted in English whose work is seriously defective in spelling, punctuation, grammar, choice of words, sentence structure, paragraphing, or other essentials of good usage.

MATHEMATICS.

A. *Algebra.* The four fundamental operations for rational algebraic expressions; factoring, determination of highest common factor and least common multiple by factoring; fractions, involution, evolution, radicals, and imaginary quantities. Equations of the first and second degree, ratio and proportion, progressions; binominal theorem for positive integral exponents, and permutations and combinations limited to simple cases.

B. *Plane Geometry.* Five Books. Demonstration of theorems and constructions, including rectilinear figures, circles, proportional lines, and similar figures; comparison and measurement of surfaces, including triangles, regular polygons, and circles; maxima and minima; originals.

C, D. The entrance requirements in Solid Geometry and Plane Trigonometry are similar to the work done in these subjects in the College course as given on page 84. For advanced standing in Solid Geometry and Trigonometry, candidates must present note-books and other evidence of thoro work.

POLITICAL AND PHYSICAL GEOGRAPHY.

The requirements in Political Geography may be met by the study of any good text-book. The requirement in Physical Geography may be met by the study of any text-book equivalent to Gilbert and Bringham's "Introduction to Physical Geography," Davis' "Elementary Physical Geography," or Tarr's "New Physical Geography."

GREEK.

A1. *Grammar.* The candidate must have familiarized himself with the essentials of grammar, namely, the

inflections of substantives and verbs; the syntax of cases, and the moods and tenses of the verb; the simple rules for the composition and derivation of words; the structure of sentences, with particular regard to conditional and relative sentences, indirect discourse, and final clauses.

A2. *Xenophon*. The first four books of "Anabasis."

B1. *Prose Composition*. The requirements in prose composition involve the ability to translate into idiomatic Greek, continuous narrative based on Xenophon's "Anabasis," Book II, and other Attic prose of similar difficulty. Due regard must be paid to the principles and practice of accentuation.

B2. *Homer*. The first three books of the "Iliad" (omitting II, 494-end) or the "Odyssey," including the Homeric forms, constructions, and prosody.

B3. *Sight Translation*. One of the most important assets which a student can bring to the study of college Greek is the ability to read easily at sight passages of equal difficulty with the "Anabasis" or the "Hellenica." For this purpose he should memorize as a working vocabulary the principal words in Xenophon and the three books of Homer.

(See pages 62-63 for Beginners' Greek in College).

LATIN.

A1. *Grammar*. Allen and Grenough's preferred.

A2. Caesar's "Gallic War," Books I-IV.

B1. *Prose Composition*, including the translation of English passages on Caesar and Cicero.

B2. *Six Orations of Cicero*, including at least two against Catiline, the one for Archias, and the one for the Manilian Law.

C. *Vergil's "Aeneid,"* Books I-IV, and so much prosody as relates to Latin versification in general and the dactylic hexameter in particular.

Equivalents will be accepted for work done in Sallust or Ovid or other authors of equal rank.

GERMAN.

The requirements in German presuppose a systematic course extending over at least two years of school work.

The candidate is expected to be able to pronounce German clearly and distinctly. He must possess an accurate knowledge of the rudiments of grammar, and should have acquired an elementary German vocabulary. He should be able to translate easy prose and poetry, and to put into German simple English sentences taken from the language of every-day life and easy selections from English narrative prose.

FRENCH.

The requirements in French correspond to those in German, and include the ability to pronounce French accurately, to read easy French prose, to put into French simple English sentences taken from the language of every-day life and easy selections from English narrative prose, and a good knowledge of the rudiments of French grammar.

SPANISH.

The requirements in Spanish correspond to those in French.

MECHANICAL DRAWING.

Drawings, accompanied by a certificate from the instructor, must be submitted. One unit credit will be allowed in cases where not less than two hundred hours of work has been devoted to the subject.

HISTORY.

A. *United States.* Montgomery's "Leading Facts of American History," or its equivalent.

B. English. Walker's "Essentials of English History," or its equivalent.

C. Ancient. Myers' "Ancient History," or its equivalent.

D. Medieval and Modern. Myers' "Medieval and Modern History," or its equivalent.

CHEMISTRY.

The candidate should have such knowledge of the general principles of the science and the properties of the more important elements as may be obtained by a careful study of a text-book of the scope of Remsen's "Introduction to the Study of Chemistry, Briefer Course."

The pupil should have performed in the laboratory experiments in number and general character the equivalent of those given in Remsen's "Introduction." The record of this work must be contained in a note-book describing in the pupil's own words the materials used, the apparatus employed (with drawings), the changes occurring, and the resulting products, with the conclusions properly drawn from the phenomena observed.

This note-book must be presented bearing the following endorsement by the instructor: "This note-book is a true and original record of experiments actually performed by —— in —— school during the year ——."

PHYSICS.

A good high school course, using any standard high school text, covering the simple principles of Physics, descriptive and experimental rather than mathematical, including not less than three class periods and two hours of laboratory work a week for one year.

BOTANY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to text-book and laboratory study of this subject with the aid of Bergen's "Essentials of Botany" or some other standard book of equal merit. Drawings and note-books are required.

ZOÖLOGY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to this subject. Davidson's "Practical Zoölogy" or any other standard book of equal grade will be accepted. Note-books and drawings must accompany the certificate.

THE GROUP SYSTEM OF COURSES.

The courses of study in the College are arranged in ten groups. These groups are designed to be of equal value in the mental training of the student. This arrangement accomplishes several purposes. It enables the student to select those subjects which are of special value in preparation for subsequent professional study or business. In the first six groups it provides for a general training and broad culture which requires the student not to specialize but to concentrate a fair proportion of his time and energy on one or two related subjects. This gives a fuller training of the mental powers than results from a more diffused and often aimless selection of studies in a too largely elective system.

In addition to these groups of non-professional courses, groups have been established in Civil, Municipal, Mechanical, and Electrical Engineering.

The groups of studies are described in detail on pages 32 to 58 with entrance requirements for each.

VALUE OF A SEMESTER HOUR OF COLLEGE WORK.

A semester hour of college work consists of the equivalent of one weekly exercise for one semester, either a recitation, a lecture, a laboratory period of two and a half or three hours, or an assignment of equivalent work on which an examination is held. A weekly exercise for one semester consisting of one lecture hour in connection with two laboratory hours, counts as one semester hour.

Group Adviser: Professor Bikié.

Entrance Requirements: English, 3 units; Mathematics, A, B, 2½ units; Latin A, B, C, 4 units; Greek A, B, 3 units, or 3 units of Modern Languages; and 2½ elective units.

This Group is especially recommended for its cultural value and as a preliminary training course for those intending to enter the ministerial, legal, medical, journalistic, or teaching profession, and also provides a foundation for advanced language study.

This Group leads to the degree of **Bachelor of Arts**.

The following Schedule of Studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek*: Lucian, Lysias	1*	3	2*	3	62
or Greek*: First Year Greek	A*	3	A*	3	62
Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3	64
English: English Composition	A	3	A	3	59
History: Political History of Modern Europe	1	2	1	2	69
English Bible: General Introduction	1	1	1	1	68
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	1	3	1, 2	3	83
Chemistry: General Chemistry	1	3	1	3	81
Military Science: (Optional)	1	1	2	1	100
Total Semester Hours	18-19		18-19		

* Students offering a Modern Language for admission will take Greek A, and those offering Greek for admission will take Greek 1 and 2.

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek* : Plato (Apology and Crito), Homer (Odyssey), or Greek* : Second Year Greek	3* B*	3 3	4* B*	3 3	62, 63 62
Latin : Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3	65
English : English and American Literature	1	2	1	2	59
Philosophy : Psychology, Introduction to Philosophy	1	2	2	2	70, 71
Military Science : (Optional)	3	1	4	1	101
Electives :		6		6	
Total Semester Hours	16-17		16-17		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek* : Lucian, Lysias	1†	3	2†	3	62
English : Shakespeare	2	2	2	2	59
Economics : Principles of Economics	1	3	1	3	74
Christian Evidences :	1	2			69
Philosophy : Logic	3	2			71
Philosophy : Ethics			5	2	71
Physics : Elements of Physics	A	4	A	4	85
or Physics : General Physics (Mechanics, Sound, and Heat),	1	3	1	3	85
and Physics ‡: Laboratory Physics	5	2	6	2	86
Elective : Military Science	5	2	6	2	102
Electives :		5		7	
Total Semester Hours	16-20		16-20		

* Students offering Modern Language for admission will take Greek B, and those offering Greek for admission will take Greek 3 and 4.

† Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

‡ In some cases Physics 1 may be taken without Physics 2 (If approved by the Group Adviser and Instructor).

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Greek*: Plato (Apology and Crito), Homer (Odyssey)	3*	3	4*	3	62
Philosophy: History of Philosophy	6	3	6	3	71
Philosophy: Theism			8	2	72
Electives:	9-15		7-13		
It is suggested that these be chosen from the following:					
Latin: Terence, Latin Literature, Roman Law	9, 10	2	10, 11	2	65, 66
Greek: Euripides, Greek History	5	2	6	2	63
Modern Language:	2 or 3	2 or 3	2 or 3		60-66
English: Public Speaking	5	2	5	2	60
History: English History, United States History	2	3	3	3	70
Education: History of Education, Pedagogy	1	3	2	3	73
Education: School Organization and Method of Teaching	3	2			73
Comparative Philology:	1	1	1	1	68
Biology: Personal and Public Hygiene	9	1	9	1	80
Physics: Electricity and Light	3, 4	4	3, 4	4	83
Military Science:	7	2	8	2	102
<hr/>					
Total Semester hours	16-20		16-20		

*Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

GROUP II.—LATIN AND MODERN LANGUAGES.**Group Adviser:** Professor Grimm.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; Latin A, B, C, 4 units; 2 units of Modern Languages or Greek; History, 1 unit; and $2\frac{1}{2}$ elective units.

This Group is recommended for its cultural value and is further well adapted to preparation for the legal or teaching professions or for literary pursuits. The emphasis is laid on Latin and the Modern Languages, and provision is made for those who wish to make a special study of them.

This Group leads to the degree of **Bachelor of Arts**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the Course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3	64
Modern Language:		3		3	60-66
English: English Composition	A	3	A	3	59
History: Political History of Modern Europe	II	2	I	2	60
English Bible: General Introduction	I	1	I	1	68
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	I	3	2	3	83
Biology: General Biology, Zoölogy	1, 2	3	2, 3	3	78
or Chemistry: General Chemistry,	I	3	I	3	81
or Physics: Elements of Physics,	A	4	A	4	85
or Physics: General Physics (Mechanics, Sound, and Heat),	I	3	I	3	85
and Physics*: Laboratory Physics	2*	1	2*	1	85
Military Science: (Optional)	I	1	2	1	100

Total Semester Hours

18-20

18-20

* In some cases Physics 1 may be taken without Physics 2 (if approved by the Group Adviser and Instructor).

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3	65
Modern Language:	*	3	*	3	60, 61
English: English and American Literature	1	2	1	2	59
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2	70, 71
Military Science: (Optional)	3	1	4	1	101
Elective: Modern Language (advised)		3		3	60-66
Total Semester Hours	16-17		16-17		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Languages:		6		6	60-66
English: Shakespeare	2	2	2	2	59
English: English Novel or Anglo-Saxon	3, 4	2	3, 4	2	59
Economics: Principles of Economics	1	3	1	3	74
Christian Evidences:	1	2			69
Philosophy: Ethics			5	2	71
Elective: Military Science	5	2	6	2	101
Electives:		1-4		1-4	
Total Semester Hours	16-20		16-20		

* The Modern Language chosen in the Freshman Year must be continued.

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Languages:		6+		6+	60-66
Electives:		10+		10+	
Military Science:	7	2	8	2	102
Those looking toward teaching are advised to elect:					
Education: History of Education, Pedagogy	1	3	2	3	73
Education: School Organization and Method of Teaching	3	2			73
Philosophy: Logic	2	2			71
<hr/>					
Total Semester Hours		16-20		16-20	

GROUP III.—HISTORY AND POLITICAL SCIENCE.**Group Adviser:** Professor Valentine.

Entrance Requirements: English, 3 units; Mathematics, A, B, 2½ units; Latin A, B, C, 4 units; 2 units of Modern Languages or Greek; History, 2 units; and 1½ elective units.

In this Group emphasis is laid on the historical studies and on Political Science and Economics. The Group is intended to lay the foundations for professional legal studies and to prepare for the teaching of these subjects.

This Group leads to the degree of **Bachelor of Arts.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3	64
Modern Language:		3		3	60-66
English: English Composition	A	3	A	3	59
History: Political History of Modern Europe	1	2	1	2	69
English Bible: General Introduction	1	1	1	1	70
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	1	3	2	3	82
Biology: General Biology, Zoölogy,	1, 2	3	2, 3	3	83
or Chemistry: General Chemistry,	1	3	1	3	81
or Physics: Elements of Physics,	A	4	A	4	85
or Physics: General Physics (Mechanics, Sound, and Heat),	1	3	1	3	85
and Physics*: Laboratory Physics	2*	2	2*	1	85
Military Science: (Optional)	1	1	2	1	100

Total Semester Hours**18-19****18-19**

* In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

Sophomore Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3	65
Modern Language:		3		3	60-66
English: English and American Literature	1	2	1	2	59
American Government: Political Science	1	3	2	3	76, 77
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2	70, 71
Military Science: (Optional)	3	1	4	1	102
Electives:		3		3	
Total Semester Hours	16-17		16-17		

Junior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
English: Shakespeare	2	2	2	2	59
Economics: Principles of Economics	1	3	1	3	74
Economics: Labor Problems, Business Organization	7†	3	8†	3	75, 76
or Political Science: Comparative Government, Constitutional Law	3†	3	4†	3	77
History‡: English History	2†	3	2‡	3	
or History†: United States History	3†	3	3†	3	70
Christian Evidences:	1	2			69
Philosophy: Ethics			5	2	71
Elective: Military Science	5	2	6	2	101
Electives:		3-6		3-6	
Total Semester Hours	16-19		16-19		

† Given 1920-1921 and alternate years.

‡ Given 1919-1920 and alternate years.

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Economics †: Labor Problems, Business Organization	7†	3	8†	3	75
or Political Science †: Comparative Government	3	3			77
History *: English History	2*	3	2*	3	70
or History †: United States History	3†	3	3†	3	70
Philosophy : Sociology	4	2			71
Electives :	8-11		8-11		
It is suggested that the electives in the Junior and Senior Years be taken from the following:					
Latin : Roman Law	1	1			66
Economics : Money and Banking, Business Law	2*	3	5	3	74, 75
Economics : Public Finance	3	3			74
Philosophy : Advanced Logic	9	1			72
Modern Language :	1 or 1½		1 or 1½		60-66
Military Science :	7	2	8	2	102
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Total Semester Hours	16-19		16-19		

* Given 1919-1920 and alternate years.

† Given 1920-1921 and alternate years.

GROUP IV.—CHEMISTRY AND PHYSICS.**Group Advisers:**

Chemistry Section: Professor Breidenbaugh.

Physics Section: Professor Parsons.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; 4 units from this list: Latin, French, German, and Spanish; and sufficient electives to make a total of 15 units.

In this Group the emphasis is laid on Chemistry and Physics with the requirement that special attention be given to one of these subjects in the Junior and Senior Years. The Group is intended to prepare for teaching these subjects, or for professional studies in these lines or for advanced work in research laboratories in the field of Chemistry and Physics (both scientific and technical), or for manufacturing and commercial pursuits.

Either the Chemistry or Physics section should be selected on entering the Group; however, the choice between Chemistry and Physics as the principal subject is not required to be made until the beginning of the Junior Year.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:					60-66
Latin: Livy, Horace (Odes), Cicero (De Senectute),					
or Modern Language:					
English: English Composition	A	3	A	3	59
History: Political History of Modern Europe	I	2	I	2	69
English Bible: General Introduction	I	1	I	1	70
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	I	3	2	3	83
Chemistry: General Chemistry	I	3	I	3	81
Military Science: (Optional)	I	1	2	1	101
Total Semester Hours	18-19		18-19		

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:					60-66
English: English and American Literature	I	2	I	2	59
Philosophy: Psychology, Introduction to Philosophy	I	2	2	2	70, 71
Mathematics: Advanced Algebra, Plane and Solid Analytic Geometry†	3	3			83
Elementary Analysis†			4	4	83
			5	3	83
Chemistry: Qualitative Analysis	2	3	2	3	81
Physics: General Physics (Mechanics, Sound, and Heat)	I	3	I	3	85
Physics: Laboratory Physics	2	1	2	1	85
Military Science: (Optional)	3	1	4	1	101
Total Semester Hours	17-18		17-19		

* The language chosen in the Freshman Year must be continued.

† For Chemistry Section.

‡ For Physics Section.

Junior Year (Chemistry Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	59
Economics: Principles of Economics	1	3	1	3	74
Christian Evidences:	1	2			69
Philosophy: Ethics			5	2	71
Chemistry: Quantitative Analysis	3	3	3	3	81
Physics: General Physics (Electricity and Magnetism, and Light)	3	3	3	3	85
Physics: Physical Measurements	4	1	4	1	86
Elective: Military Science	5	2	6	2	101
Electives:		2-5		2-5	
Total Semester Hours		16-19		16-19	

Senior Year (Chemistry Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Chemistry: Organic Chemistry A	4	3			81
Chemistry: Organic Chemistry B	4	6			81
Chemistry: Industrial Chemistry			8	3	82
Chemistry: Special Quantitative Methods			7	6-8	82
Electives:		4-6		2	
Military Science:	7	2	8	2	102
Students intending to engage in Chemical work or in teaching Chemistry are advised to elect from the following list:					
Geology and Mineralogy: Dynamical and Historical Geology	1	2	2	2	82
Geology and Mineralogy: Mineralogy	3	2	3	2	82
French:		3		3	66
German: Scientific German	3	3	3	3	61
Spanish: Elementary Spanish	1	3	1	3	67
Education:		3		3	73
Total Semester Hours		16-18		16-18	

Junior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	59
Economics: Principles of Economics	1	3	1	3	74
Christian Evidences:	1	2			69
Philosophy: Ethics			5	2	71
Mathematics: Differential and Integral Calculus	6	4	6	4	84
Physics: General Physics (Electricity and Magnetism, and Light)	3	3	3	3	85
Physics: Physical Measurements	4	1-2	4	1-2	86
Elective: Military Science	5	2	6	2	101
Electives:		0-4		0-4	
Total Semester Hours	16-19		16-19		

Senior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Mathematics: Differential Equations	7	3			84
Physics: Physics Seminary	11	1	11	1	87
Physics: Advanced Laboratory Physics	10	2	10	2	87
Physics: Recent Advances in Physics,	7	1	7	1	86
Physics: Electrical Measurements	6	3	6	3	86
Electives:		6-9		6-9	
Military Science:	7	2	8	2	104
To those intending to pursue advanced work in Physics it is suggested that electives be chosen from the following:					
Modern Languages:	5 or 8		5 or 8		60-66
Physics: Mathematical Physics	8 or 9	2	8 or 9	2	87
Geology and Mineralogy: Dynamical and Historical Geology	1	2	2	2	82
Biology: General Biology and Zoölogy	1, 2	3	2, 3	3	78
Total Semester Hours	16-19		16-19		

GROUP V.—BIOLOGY, CHEMISTRY, AND PHYSICS.

Group Adviser: Professor Stahley.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; 2 units of Modern Languages and 2 units of Latin; and sufficient electives to make a total of 15 units.

This Group offers advantages in supplying the essentials of a general science course, and in addition includes those special branches in pre-medical studies which will admit the graduate to any school of medicine he may desire to enter.

To meet the requirements of those medical schools that admit on two years of college work the following course is given:

First year,—German, Latin or French, English, Chemistry, Biology.

Second year,—German or French, English, Chemistry, Biology, Physics, Philosophy.

Members of this Group, by adding certain studies as electives in the Senior year in the Department of Philosophy, will completely meet the teaching requirements of the Pennsylvania School Code.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

CORRECTION FOR GROUPS V AND VI.

For Group V the entrance requirements should be as follows: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; 4 units from this list: Latin, French, German, Spanish; and sufficient electives to make a total of 15 units.

For Group VI the entrance requirements should be as follows: English, 3 units; Mathematics A, B $2\frac{1}{2}$ units; History, 2 units; 4 units from this list: Latin, French, German, Spanish; and sufficient electives to make a total of 15 units.

Junior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	59
Economics: Principles of Economics	1	3	1	3	74
Christian Evidences:	1	2			69
Philosophy: Ethics			5	2	71
Mathematics: Differential and Integral Calculus	6	4	6	4	84
Physics: General Physics (Electricity and Magnetism, and Light)	3	3	3	3	85
Physics: Physical Measurements	4	1-2	4	1-2	86
Elective: Military Science	5	2	6	2	101
Electives:		0-4		0-4	
Total Semester Hours	16-19		16-19		

Senior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Mathematics: Differential Equations	7	3			84
Physics: Physics Seminary	11	1	11	1	87
Physics: Advanced Laboratory Physics	10	2	10	2	87
Physics: Recent Advances in Physics,	7	1	7	1	86
Physics: Electrical Measurements	6	3	6	3	86
Electives:		6-9		6-9	
Military Science:	7	2	8	2	104
To those intending to pursue advanced work in Physics it is					

GROUP V.—BIOLOGY, CHEMISTRY, AND PHYSICS.

Group Adviser: Professor Stahley.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; 2 units of Modern Languages and 2 units of Latin; and sufficient electives to make a total of 15 units.

This Group offers advantages in supplying the essentials of a general science course, and in addition includes those special branches in pre-medical studies which will admit the graduate to any school of medicine he may desire to enter.

To meet the requirements of those medical schools that admit on two years of college work the following course is given:

First year,—German, Latin or French, English, Chemistry, Biology.

Second year,—German or French, English, Chemistry, Biology, Physics, Philosophy.

Members of this Group, by adding certain studies as electives in the Senior year in the Department of Philosophy, will completely meet the teaching requirements of the Pennsylvania School Code.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:		3		3	60-66
or Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	1, 2	3	64
English: English Composition	A	3	A	3	59
History: Political History of Modern Europe	1	2	1	2	69
English Bible: General Introduction	1	1	1	1	68
Mathematics: Plane Trigonometry, and Algebra, Advanced Algebra	1	3	2	3	83
Chemistry: General Chemistry	1	3	1	3	81
Military Science: (Optional)	1	1	2	1	101
Total Semester Hours	18-19		18-19		

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:		3		3	60-66
English: English and American Literature	1	2	1	2	59
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2	70, 71
Mathematics: Advanced Algebra	3	3			83
Chemistry: Qualitative Analysis	2	3	2	3	81
Physics: General Physics, (Mechanics, Sound, and Heat),	1	3	1	3	85
Physics: Laboratory Physics	2	1	2	1	85
Military Science: (Optional)	3	1	4	1	101
Total Semester Hours	17-18		18-19		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	59
Christian Evidences:	1	2			69
Philosophy: Ethics			5	2	71
Biology: General Biology, Zoölogy	1, 2	4	2, 3	4	78
Biology: Botany	7	2	7	2	79
Chemistry: Quantitative Analysis	3	3	3	3	81
Physics: General Physics (Electricity and Magnetism, and Light)	3	3	3	3	85
Physics: Physical Measurements	4	1	4	1	86
Elective: Military Science	5	2	6	2	101
<hr/>					
Total Semester Hours		17-19		17-19	

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics: Principles of Economics	1	3	1	3	74
Biology: Human Anatomy and Physiology, Mammalian Histology, Embryology	4	3	5, 6	3	79
Chemistry: Organic Chemistry A	4	3			81
Chemistry: Organic Chemistry C	4	3	4	3	82
Electives:		5-8		5-8	
Military Science:	7	2	8	2	102
Those looking forward to teaching are advised to elect:					
German: Scientific German	3	3	3	3	61
Philosophy: Logic	3	2			71
Education: History of Education, Pedagogy	1	3	2	3	73
Education: School Organization and Method of Teaching	3	2			73
Biology: Personal and Public Hygiene	9	1	9	1	80
Those looking forward to Medicine are advised to elect:					
Political Science: Comparative Government, American Government	3	3	2	3	77
French:	2 or 3		2 or 3		66
or German:	1	3	2	3	60
Biology: Personal and Public Hygiene	9	1	9	1	80
Geology: Dynamical and Historical Geology	1	2	2	2	82
Physics: Recent Advances in Physics			7	2	86
In addition to the above lists, the following are suggested for general culture:					
History: English History	2	3	2	3	70
Total Semester Hours	16-18		16-18		

GROUP VI.—COMMERCE AND FINANCE.**Group Adviser: Professor Ewing.**

Entrance Requirements: English, 3 units; Mathematics A, B, 2½ units; History, 2 units; 2 units of Modern Languages and 2 of Latin; and sufficient electives to make a total of 15 units.

This Group is designed primarily for students who intend to enter business, law or the public service. Especial attention is given to the general principles underlying all lines of business, and to the relation of business to government and politics.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:		3	3		60-66
English: English Composition	A	3	A	3	59
History: Political History of Modern Europe	I	2	I	2	69
English Bible: General Introduction	I	1	I	1	68
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	I	3	2	3	83
Biology: General Biology, Zoölogy,	1, 2	3	2, 3	3	80
or Chemistry: General Chemistry,	I	3	I	3	81
or Physics: General Physics (Mechanics, Sound, and Heat),	I	3	I	3	85
and Physics*: Laboratory Physics	2*	1	2*	1	85
or Physics:	A	4	A	4	85
Military Science: (Optional)	I	1	2	1	100
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Total Semester Hours		18-20		18-20	

* In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:					
English: English and American Literature					60-66
Philosophy: Psychology, Introduction to Philosophy					
Economics: Principles of Economics					
Political Science: Principles of Political Science, American Government and Politics					
Economics: Accounting					
Military Science: (Optional)					
Total Semester Hours		16-17		16-17	

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:					
English: Shakespeare					60-66
History†: English History,					
or History‡: United States History					
Economics†: Money and Banking,					
Business Law,					
or Economics†: Public Finance, Accounting					
or Economics†: Railway Transportation, Rural Economics					
Economics‡: Labor Problems, Business Organization,					
or Political Science†: International Law, Constitutional Law					
or Political Science†: Comparative Government, Conservation of National Resources					
Christian Evidences:					
Philosophy: Ethics					
Elective: Military Science					
Total Semester Hours		16-18		16-18	

* The Modern Language chosen in the Freshman year must be continued.

† Given 1919-1920 and alternate years.

‡ Given 1918-1919 and alternate years.

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics* : Money and Banking, Business Law,	2*	3	5*	3	74, 75
or Economics* : Public Finance, Accounting	3*	3	6B*	3	74, 75
or Economics* : Railway Transportation, Rural Economics	9	3	10	3	76
Economics† : Labor Problems, Business Organization,	7†	3	8†	3	75, 76
or Political Science* : International Law, Constitutional Law	5*	3	4*	3	77
or Political Science* : Comparative Government, Conservation of Natural Resources	3	3	6	3	76
Philosophy† : Sociology	4†	2			
Electives :		8-10		10-12	71
Elective : Military Science	7	2	8	2	102
Total Semester Hours	16-18		16-18		

* Given 1919-1920 and alternate years.

† Given 1918-1919.

GROUP VII.—CIVIL AND MUNICIPAL ENGINEERING.**GROUP VIII.—MUNICIPAL (SANITARY) ENGINEERING.****Group Adviser:** Professor Clutz.

Entrance Requirements: English, 3 units; Mathematics A, B, and D, 3 units; 2 units of Modern Languages; and sufficient electives to make a total of 15 units.

This Group affords suitable training not only for students who expect to enter this profession, but for those who wish to prepare themselves for callings more or less closely related to engineering. During the first two years emphasis is laid on the underlying natural sciences and on mathematics, while during the last two years technical subjects are introduced. Some liberal arts studies are required, and extreme specialization in instruction is avoided.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.			Second Semester.		
	Course Number	Hours	Credit	Course Number	Hours	Credit
Modern Language:			3		3	60-66
or Latin: Livy, Horace,	1, 2	3		2, 3	3	64
English: English Composition,	A	3		A	3	59
Mathematics: Plane Trigonometry and Algebra	1	3				83
Mathematics: Advanced Algebra	3	3				83
Mathematics: Plane Analytic Geometry				4	4	83
Chemistry: General Chemistry	1	3		1	3	81
Physics: General Physics (Mechanics, Sound, and Heat)	1	3		1	3	85
Physics: Laboratory Physics	2	1		2	1	85
Engineering: Mechanical Drawing	1	1		1	1	89
Military Science: (Optional)	1	1		2	1	100
Total Semester Hours	20-21			18-19		

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	59
Mathematics: Differential and Integral Calculus	6	4	6	4	84
Chemistry: Qualitative Analysis	2	3			81
Physics: General Physics (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	85
Physics: Physical Measurements	4	1	4	2	86
Engineering: Descriptive Geometry	2	3			89
Engineering: Surveying			12	3	90
Engineering: Mechanics	3	3	3	3	89
Military Science: (Optional)	3	1	4	1	101
Total Semester Hours	19-20		17-18		

Summer Field Surveying.

Civil Engineering 11.—Surveying (A), Field Work. Three weeks (145 hours) in August and September between Sophomore and Junior Years. Credit of two semester hours. (See page 91).

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	69
English Bible: General Introduction	1	1	1	1	68
Philosophy: Psychology	1	2			70
Mathematics: Astronomy	10	1			84
Geology and Mineralogy: Mineralogy	3	2			82
Physics: Electrical Measurements	6	3			86
Engineering: Hydraulics*	5	3			90
Engineering: Materials Testing	6	4			90
Engineering: Elements of Electrical Engineering			7	4	90
Civil Engineering: Structural Design (A) and (B)	18	2	19	2	92
Civil Engineering: Railroads (A)			16	4	91
Civil Engineering: Sewerage*			23	2	93
Water Supply*	24	2			93
Masonry*	22	3			93
Highways*			23	2	93
Contracts and Specifications*			21	2	93
Military Science: (Optional)	5	2	6	2	101
Total Semester Hours	18-20		16-18		

*As offered

Summer Field Surveying.

Civil Engineering 13.—Surveying (B), Field Work. Three weeks (145 hours) in August and September between Junior and Senior Years. Credit of two semester hours. (See page 91).

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics*: Principles of Economics	1	3	1	3	74
Christian Evidences:	1	2			68
Philosophy: Ethics			5	2	71
English: English Novel and Short Story	3	2	3	2	59
Geology and Mineralogy: Dynamical Geology	1	2			82
Civil Engineering: Surveying (B), Office Work	14	2			91
Civil Engineering: Railroads (B)			17	2	92
Civil Engineering: Structural Design, (B) and (C)	19	3	28	3	92
Civil Engineering: Structural Drafting			20	2	92
Civil Engineering: Contracts† and Specifications			21	2	93
Civil Engineering† Masonry	22	3			93
Civil Engineering: Highways†			23	2	93
Civil Engineering: Seminary	26	1	26	1	93
Civil Engineering: Sewerage†			25	2	93
Military Science: (Optional)	7	2	8	2	102
Total Semester Hours	18-20		20-22		

* Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

† As offered

GROUP IX.—MECHANICAL ENGINEERING.**GROUP X.—ELECTRICAL ENGINEERING.**

Group Adviser: Professor Rosenstengel.

Entrance Requirements: English, 3 units; Mathematics A, B, and D, 3 units; 2 units of Modern Languages; and sufficient electives to make a total of 15 units.

This Group is designed for students who wish to prepare themselves for work along engineering and manufacturing lines. The Group combines the study of the basic principles of engineering and, to a limited extent, their application to practical problems, with some work in the liberal arts. The instruction is of a broad and fundamental nature, and will be found useful to students who are desirous of fitting themselves for future promotion to executive positions in manufacturing and industrial concerns.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:		3		3	60-66
or Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3	64
English: English Composition,	A	3	A	3	59
Mathematics: Plane Trigonometry and Algebra	I	3			83
Mathematics: Advanced Algebra	3	3			83
Mathematics: Plane Analytic Geometry			4	4	83
Chemistry: General Chemistry	I	3	I	3	81
Physics: General Physics (Mechanics, Sound, and Heat)	I	3	I	3	85
Physics: Laboratory Physics	2	I	2	I	85
Engineering: Mechanical Drawing	I	I	I	I	89
Military Science: (Optional)	I	I	2	I	100
<hr/>					
Total Semester Hours		20-21		18-19	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	59
Mathematics: Differential and Integral Calculus	6	4	6	4	84
Chemistry: Qualitative Analysis	2	3			81
Physics: General Physics (Electricity and Magnetism, and Light, and Dynamics)	3	3	3	3	85
Physics: Physical Measurements	4	1	4	1	86
Engineering: Descriptive Geometry	2	3			89
Engineering: Mechanics	3	3	3	3	89
Engineering: Surveying (A)			12	3	91
Military Science: (Optional)	3	1	4	1	101
Total Semester Hours	19-20		17-18		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	69
English Bible: General Introduction	1	1	1	1	68
Philosophy: Psychology	1	2			70
Engineering: Hydraulics			5	3	90
Engineering: Materials Testing	6	4	6	1	90
Engineering: Elements of Electrical Engineering	7	2	7	3	90
Mechanical Engineering: Shop Work	31	2	32	2	94
Mechanical Engineering: Kinematics	33	4			94
Mechanical Engineering: Machine Design (A)			34	3	94
Mechanical Engineering: Heat Power Engineering (A)	36	3	36	3	95
Military Science: (Optional)	5	2	6	2	101
Total Semester Hours	19-21		18-20		

Senior Year (Group IX).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics*: Principles of Economics	I	3	I	3	74
Christian Evidences:	I	2			68
Philosophy: Ethics			5	2	71
English: English Novel and Short Story	3	2	3	2	59
Mechanical Engineering: Machine Design (B)	35	3	35	3	94
Mechanical Engineering: Heat Power Engineering (B)	37	3	37	2	95
Mechanical Engineering: Power Plant Design			38	2	95
Mechanical Engineering: Mechanical Engineering Laboratory	39	I	39	I	95
Civil Engineering: Structural Design (A) and (B)	18	2	19	2	92
Mechanical Engineering: Seminary			40	I	96
Military Science: (Optional)	7	2	8	2	102
Total Semester Hours	17-18		18-20		

* Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

Senior Year (Group X).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics*: Principles of Economics	1	3	1	3	74
Christian Evidences:	1	2			68
Philosophy: Ethics			5	2	71
English: English Novel and Short Story	3	2	3	2	59
Mechanical Engineering: Mechanical Engineering Laboratory	39	1	39	1	95
Electrical Engineering: Theory of Electrical Machinery	45	5	45	2	96
Electrical Engineering: Characteristics of Electrical Machinery	46	1	46	3	96
Electrical Engineering: Electrical Laboratory	47	2	47	2	98
Mechanical Engineering: Heat Power Engineering (B)	37	3			95
Electrical Engineering: Seminary			48	1	97
Military Science: (Optional)	7	2	8	2	102
Total Semester Hours	19-21		16-18		

*Or other courses in economics aggregating six semester hours selected with the approval of the Department of Economics.

COURSES OF INSTRUCTION.

ENGLISH.

Professor Hagen and Mr. Pontius.

A. English Composition.—This course consists of practice in writing exposition, argument, description, and narration, in long and short themes, and in letters; with the parallel study of specimens, and of the principles of rhetoric as they apply to writing. Lectures, recitations, written exercises in the class-room and outside, and personal conferences.

Required course for all Freshmen. Three periods thruout the year. Credit of six semester hours.

1. English and American Literature.—This course consists of a survey of English Literature from "Bewoulf" to Kipling, and of the chief American writers; lectures, collateral reading, and written reports.

Required course for all Sophomores. Two periods thruout the year. Credit of four semester hours.

2. Shakespeare.—This course embraces the careful study of half a dozen of the plays, with the more rapid reading of others, selected and arranged so as to give the student an insight into the development of Shakespeare's mind and art.

Required course for all Juniors in Groups I-VI. Two periods thruout the year. Credit of four semester hours.

3. English Novel and Short Story.—First two-thirds of the year, a survey of the growth of the novel in structure and content; last third of year, a study of the principles and structure of the short story. Lectures, collateral reading of representative novels and short stories, class discussions, weekly reports, and personal conferences.

Required course for Juniors in Groups II and VI, and all Seniors in Groups VII-X; open to all other Juniors as an elective course. Two periods thruout the year. Credit of four semester hours.

4.—Anglo Saxon.—An introductory course including the study of the elementary principles of the grammar and the reading of representative selections from Anglo-Saxon literature.

Elective for Juniors and Seniors. May be substituted by Juniors and Seniors in Groups II and VI for Course 3. Two periods thruout the year. Credit of four semester hours. (Omitted 1918-1919)

5. Public Speaking and Oral Reading.—This course consists of practice in prepared and extempore speaking, in oral reading of prose and poetry, and in general platform work.

Elective course open to all qualified students. Two periods thruout the year. Credit of four semester hours.

6. Argumentation and Debating.—A study of the substance and the forms of argumentative discourse, written and spoken; involving the principles of inductive and deductive logic, of sound and fallacious reasoning, of evidence, of the selection and use of materials, and of the best forensic and platform practice.

Elective course open to members of class and college debating teams; and to qualified Juniors and Seniors. Two periods thruout the year. Credit of four semester hours.

GERMAN.

Professor Grimm.

German A.—An elementary course. It includes the study of grammar, practice in reading, writing and speaking German, translation of prose and poetry, and the memorizing of simple poems.

Three periods thruout the year. Credit of six semester hours.

German 1.—For students who have presented German for admission; also for those who have completed German A. This course comprises a brief review of grammar, a careful study of syntax combined with oral and written composition, exercises in conversation, and readings, both with previous preparation and at sight, from standard writers of modern German prose. Some time is also given to the reciting of ballads and lyrics. Outside reading may be assigned.

Three periods thruout the year. Credit of six semester hours.

German 2.—For students who have passed in German 1. This course is devoted to the study of selections from classical authors, chiefly from Goethe and Schiller. Private reading is required.

Three periods thruout the year. Credit of six semester hours.

German 3.—For candidates for the degree of Bachelor of Science, also open to others who have completed German 1. This course consists of the cursory reading in class of German essays of a general scientific character, together with private assignments on some special subject in Science.

Two or three periods thruout the year. Credit of four or six semester hours.

German 4.—For those students who have chosen German as their principal subject in Group II; open also to others who satisfy the instructor of their fitness to take it. The work of this course includes the study of the main epochs of the German language and literature, on the basis of readings from representative poets and masters of German style.

Two or three periods thruout the year. Credit of four or six semester hours. This course may alternate or be combined with German 2.

German 5.—An elective course on German literature in the period of the Reformation, with special reference to Luther and the church hymns. Open to advanced students in German.

Hours arranged to suit the convenience of instructor and students.

German 6.—An elective course devoted to the discussion of grammatical topics, advanced composition, and the critical reading of selected texts. Special attention is given to the needs of those students who wish to teach German in the public or secondary schools.

Hours arranged to suit the convenience of instructor and students.

German 7.—A course aiming to widen the student's vocabulary of modern German by means of extracts from newspapers, periodicals, and other suitable reading. As far as practicable, the course will be conducted in German.

Hours to be arranged.

Deutscher Verein.—Opportunity for more extended German conversation and study may be offered to advanced students in a voluntary German Club, meeting fortnightly from November to April inclusive.

GREEK.

Professor Billheimer.

Preparatory Greek.

A. First Year Greek.—An elementary course for students who have not presented Greek for admission. The course will cover White's "First Greek Book."

Three periods thruout the year. Credit of six semester hours.

B. Second Year Greek.—A course for those who have taken First Year Greek. Selections from Herodotus and Books I-IV of Xenophon's "Anabasis" will be read.

Three periods thruout the year. Credit of six semester hours.

1. Lucian.—Selections from Lucian with a thoro review of forms and the essentials of grammar. Greek Prose Composition.

Freshman course. Three periods, first semester. Credit of three semester hours.

2. Lysias.—Selected orations, special attention being given to syntax. Greek Prose Composition.

Freshman course. Three periods, second semester. Credit of three semester hours.

3. Plato.—"Apology," and "Crito." Interpretation of the text and advanced work in syntax.

Sophomore course. Three periods, first semester. Credit of three semester hours.

4. Homer.—Books IX-XIII of the "Odyssey." Attention will be given to the meter, to Ionic forms, and to the special features of syntax.

Sophomore course. Three periods, second semester. Credit of three semester hours.

5. **Euripides.**—This course will give a practical introduction to Greek metrics, and will include the history of Greek Tragedy and of the Greek Theatre.

Junior and Senior course. Two periods, first semester. Credit of two semester hours. (To be offered in 1919-1920.)

6. **Greek History.**—A survey of the history of Greece from the earliest times to the death of Alexander the Great. The study of the history of this period will be accompanied by an examination of the early archaeological remains and by the reading of selections from the literary and epigraphical sources. Reports on special subjects will be made by members of the class.

Junior and Senior course. Two periods, second semester. Credit of two semester hours. (To be offered in 1919-1920.)

7. **Demosthenes.**—The "First Philippic" and the "Olynthiacs." Oxford text. The students prepare grammatical and historical notes for each oration.

Junior and Senior course. Two periods, first semester. Credit of two semester hours. (To be offered in 1919-1920.)

8. **New Testament Study.**—This course embraces a study of New Testament Greek. Some book of the New Testament is read in the original. The study of Biblical Greek has its approach from the classic side, but special attention is given to the distinctive peculiarities of Hellenistic Greek as a later and less artificial dialect of the elaborate and polished language of orators and philosophers. The student is familiarized with the vocabulary of the New Testament. Etymology and syntax are systematically studied.

Junior and Senior course. Two periods, second semester. Credit of two semester hours. (To be offered in 1919-1920.)

Special Arrangements for Beginning Greek in College.

To provide for applicants for Group I who cannot offer the entrance requirements in Greek, but can offer three entrance units in Modern Languages instead, provision is made for beginning Greek in College. Such students take

Preparatory Greek Courses A and B during Freshman and Sophomore years, and receive College credit for same.

A student who is a regular member of Group II will be allowed to elect courses in Greek, including Courses A and B, after the Sophomore year, and will be given College credit for them.

LATIN.

Professor Biklé.

Allen and Greenough's "Latin Grammar" and Harper's "Latin Lexicon" are recommended. Of the smaller dictionaries the student is advised to get the "Elementary Latin Dictionary," by Charlton T. Lewis.

1. **Livy.**—Selections from Book I, and the Hannibalian War in Books XXI and XXII. Special attention is given the syntax and Livy's peculiarities of style. Collateral reading on the Punic Wars, and lectures on Rome and Carthage.

Freshman course. Three periods during the first semester up to the Christmas vacation. Credit of two semester hours.

2. **Horace.**—Selections from the "Odes," including a critical interpretation with special attention to the Horatian meters and the mythological and historical allusions of the text. Berens' "Hand-Book of Mythology" is recommended. Collateral reading on Horace as a lyric poet.

Freshman course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

3. **Cicero.**—The "De Senectute" will be read, with thoro drill in syntax, special attention being given to the mode uses of the Latin Subjunctive.

Freshman course. Three periods from the last of March to the close of the academic year. Credit of two semester hours.

Note. During part of the Freshman year there will be, in connection with the reading of the Latin text, drill in Latin Prose Composition, embracing a rapid review of Latin syntax, with oral and written practice in the principles involved.

4. **Cicero.**—The “De Amicitia” or the “De Natura Deorum.” Rigid drill in syntax will be continued, with training in reading the Latin text with expression. Collateral reading of the life and times of Cicero. Informal lectures on Cicero’s philosophical views.

Sophomore course. Three periods a week during the first semester up to the Christmas vacation. Credit of two semester hours.

5. **Horace.**—“Satires,” and the “De Arte Poetica.” After the study of some selected satires the “Ars Poetica” is read, and each student is required to prepare a written analysis of the poem. There is a review of the dactylic hexameter versification.

Sophomore course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

6. **Tacitus.**—The “Agricola,” or selections from the “Annals.” Along with the translation of the text there will be a study of the times in relation to the literature of this period, and special attention will be given to the characteristics of the Silver Age Latinity.

Sophomore course. Three periods from the last of March to the close of the year. Credit of two semester hours.

7. **Quintilian.**—Tenth Book of the “Institutes.” The student is required to make a close study of the terms used by Quintilian in literary criticism, and to make a summary and classification of the Greek and Roman authors.

Junior course. Two periods during the first semester to the Christmas vacation. With course 8, credit of four semester hours.

8. **Juvenal.**—Selected Satires. With full explanations of the text and collateral reading on the private and social life of the Romans of the Empire. Followed by a short course in Roman Antiquities.

Junior course. Two periods from the beginning of January to the close of the college year. With course 7, credit of four semester hours.

9. **Terence or Plautus.**—The “Andria” of Terence or the “Captivi” of Plautus. The dramatis personae are assigned to special members of the class and the parts are rendered both in Latin and English. Informal lectures on the Roman

theatre; also on the origin and development of the Latin drama, and the value of the Roman comedy to the philologist and the student of Roman life.

Senior course. Two periods for ten weeks. With courses 10 or 11, and 12 or 13, credit of four semester hours.

10. Latin Literature.—A course of lectures embracing a general survey of the whole field, and aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, with special attention to the writers of the Golden and Silver Ages. Or, —

11. Roman History.—A course of lectures covering the period from 150 B. C. to 100 A. D.

Senior course. Two periods for eight weeks. With courses 9 and 12, credit of four semester hours.

12. Roman Law. Morey's "Outlines" is the chief text-book. After a careful study of the historical development and content of Roman Law, a paper is required from each member of the class on a subject assigned for special investigation. Or, —

13. Roman Constitutional History.—The subject is pursued with the aid of a text-book.

Senior course. Two periods for seventeen weeks. With courses 9 and 10, or 11, credit of four semester hours.

FRENCH.

Professor Fundenburg and Mr. Deibert.

French 1.—Regular beginners' course. Comprises grammar, translation, composition, and conversation. Such books read as "L'Abbé Constantin," and "Le Roi des Montagnes."

Three periods thruout the year. Credit of six semester hours. (During 1918-1919 this course is recorded as French 6.)

French S.—Special course for students not qualified to take French 2. This course aims by intensive work to qualify such students to continue with French 3 the following

year. It comprises grammatical review, composition, conversation, and translation.

*Four periods thruout the year. Credit of six semester hours.
(Given only 1919-1920.)*

French 2.—Regular second year course. Rapid translation, composition, and conversation. Prerequisite is French 1, or at least two years of High School French.

*Three periods thruout the year. Credit of six semester hours.
(Recorded during 1918-1919 as French 1.)*

French 3.—Advanced course in Nineteenth Century Literature. The Romantic, Realistic, and Naturalistic Schools are studied through representative writers. This course is prerequisite to French 4 and French 5.

Three periods thruout the year. Credit of six semester hours.

French 4.—Study of French Classics, with particular emphasis on the dramatists, Corneille, Moliere, Racine. This course involves extensive outside reading and the preparation of an essay each term.

Three periods thruout the year. Credit of six semester hours.

French 5.—Old French Readings. Intended to acquaint the student with the different phases of medieval French literary production, and to present the essentials of French Historical Grammar.

Three periods thruout the year. Credit of six semester hours.

SPANISH.

Professor Fundenburg.

Spanish 1.—Beginners' course. Grammar, composition, translation of modern prose.

Three periods thruout the year. Credit of six semester hours.

Spanish 2.—Second year course. Modern and Classic prose, including Cervantes. Some emphasis on advanced composition and conversation.

Three periods thruout the year. Credit of six semester hours.

Spanish 3.—Old Spanish Readings, including the Poema del Cid, and the ballad poetry. Spanish 2 is a prerequisite.

Three periods thruout the year. Credit of six semester hours.

ITALIAN.

Professor Fundenburg.

Italian 1.—Beginners' course. Grammar, composition, and translation of modern prose and poetry. French 1 is prerequisite.

Three periods thruout the year. Credit of six semester hours.

Italian 2.—Advanced course. Dante, Petrarch, Boccaccio.

Three periods thruout the year. Credit of six semester hours.

COMPARATIVE PHILOLOGY.

Professor Grimm.

1. Linguistic Science.—A course open to advanced students, dealing with the principles of Linguistic Science.

One period thruout the year. Credit of two semester hours.

2. Sanskrit.—Beginners' course in Sanskrit. Open to Advanced students. This course includes the study of grammar and the interpretation of an easy text from Lanman's Reader.

Two periods thruout the year. Credit of four semester hours.

ENGLISH BIBLE.

Professor Valentine.

1. General Introduction to the English Bible.—The progress of the revelation presented in the Scriptures is followed in its historical developments from the origins of the Hebrew people to the close of the Apostolic Age. In explaining the difference between the Hebrews and their neighbors the reasons are found not in their peculiar environment or exclusive racial characteristics, but, as the records themselves explain it, in terms of divine planning and a progressive human responsiveness. The message of the biblical writers is studied in its historical context so that its original significance may be understood as well as its meaning for the present.

Freshman course. One period thruout the year. Credit of two semester hours.

2. Literary Study of the Bible.—The Bible is studied as a body of literature, and the sacred writings are subjected to a

morphological analysis. The study of the literary forms is entirely independent of the historical investigation. The distinctive types of literary structure in the Bible as presented by Moulton in his "Modern Reader's Bible" are studied in detail and their permanent literary value is noted. The underlying principle of this study is that a thoro understanding of the outer literary form is an essential guide to an appreciation of the inner matter and spirit.

Sophomore course. One period thruout the year. Credit of two semester hours.

3. New Testament Study.—See Greek 8.

CHRISTIAN EVIDENCES.

Professor Valentine.

1. A constructive study of the evidences of the presence and action in the world of a supernatural redemptive power operating thru the Gospel, as these appear in the first Christian documents, in Christian history, and Christian experience, with the special aim of dealing with the perplexing questions which the mind encounters in the effort to intellectualize the content of the Christian revelation and state it in terms of modern knowledge and thought. The characteristic features of Christianity, the superhuman character of Christ, His unparalleled teachings, and His supernatural works as the normal expression of His supernatural person, are dwelt upon. The inductive method is followed. The Christian conclusion is shown to be the logical outcome of a study of the unique facts.

Junior course. Two periods, first semester. Credit of two semester hours.

HISTORY.

Professor Valentine.

1. **Political History of Modern Europe.**—The present conditions of Europe are explicable only in the light of preceding events. A new era was inaugurated by the political and industrial revolutions of the eighteenth century. With these as background the progress of the subsequent development is studied, with the special view of enabling the student to understand contemporary events and

movements by thus connecting them with their proximate origins. As the development has been conspicuously social as well as political, social and political history are combined in one synthesis, and political and economic conditions are exhibited in their mutual reactions.

Freshman course. Two periods thruout the year. Credit of four semester hours.

- 2. English History.**—After a rapid introductory survey of the Anglo-Saxon period, the course begins with the Norman conquest and deals with the details of historical development down to the present time. Stress is laid upon such phases of English history as will specially aid the student to understand the modern political developments in the Anglo-Saxon world.

Junior and Senior course. Three periods each semester. Credit of six semester hours. Alternates with Course 3. Given 1919-1920 and alternate years.

Prerequisite, Course 1.

- 3. United States History.**—This course comprises a study of our national history. An effort is made to discern the social and economic forces that have been operative in the development of the republic, and thus lead to an understanding of the national problems of the present.

Junior and Senior course. Three periods each semester. Credit of six semester hours. Alternates with Course 2. Given in 1920-1921 and alternate years.

Prerequisite, Course 1.

PHILOSOPHY.

Professor Sanders.

- 1. Psychology.**—A course in general psychology which aims to acquaint the student with the phenomena of mind, the methods of psychological investigation, and the practical bearing of the various mental functions on the problems of ethics, pedagogy, etc.

Sophomore course. Two periods, first semester. Credit of two semester hours.

- 2. Introduction to Philosophy.**—The course in general psychology suggests the problems of philosophy. The course in Introduction aims to acquaint the student with the content of philosophy, the origin and development of the various problems, the aim and method of philosophy, the results which have been attained, and its relation to the other departments of human thought.

Sophomore course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

- 3. Logic.**—An introductory course in the laws of thought. The evolution of the concept, its development into judgment and inference, the systematic function of classification, the explanatory function of generalization, and the methodology of proof and investigation are studied with a view to securing a foundation for the theory of knowledge and effective scientific method.

Junior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

- 4. Sociology.**—A study of the nature of society and its problems. Starting with the psychological factors of sociation, the development of social institutions, the economic and cultural factors of social progress, and the elimination of hindrances, evils are taken up in turn with a view to an understanding of the methods of social improvement.

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

- 5. Ethics.**—A study of human conduct. The concept of personality and the idea of self-realization, as forming the background of moral judgment, are wrought into a system which explains the origin of the moral motives as well as their implication of God and immortality.

Junior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

6. History of Philosophy.

A. Ancient and Medieval Period.—This course traces the rise

and progress of reflective thought as it appears among the Greeks and culminates in Scholasticism. Special stress is placed upon the Greek thinkers, with a view to acquiring an understanding of the spirit of philosophy.

Senior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3.

B. Modern Period.—This course covers the period from the Renaissance to the present time. Special stress is placed upon the great systems. The student is required to read selections from the great thinkers and report on them, the constant aim being to cultivate the philosophizing attitude, thus furnishing a basis for independent thought as well as an inspiration to do original thinking.

Senior course. Three periods, second semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, 3, and 6 A.

7. Philosophy of Religion.—A study of religion as a distinct factor in human development. The aim of the course is to show the nature of religion and to interpret the various forms in which it manifests itself.

Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

8 Metaphysics.—Beginning with the method of system building, the student is introduced to the meaning of a world-view, the factors which a comprehensive and consistent view must recognize, and the reasons for regarding Theism as the theory which best meets existing requirements.

Senior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, 3, 5, and 6.

9. Advanced Logic.—A study of epistemology investigating the principles of science with a view to understanding their origin, their validity, and their philosophical implications.

Senior course. Two periods, first semester. Credit of two semester hours. (Omitted 1918-1919.)

Prerequisite, Courses 1, 2, and 3.

- 10. Advanced Psychology.**—A study of the problems and methods in modern psychology. The course is adapted to those who intend pursuing advanced studies in the mental sciences. Individual research work is required.

Senior course. Two periods, first semester. Credit of two semester hours. (Omitted 1918-1919.)

EDUCATION.

Professor Sanders.

- 1. History of Education.**—A study of the most important movements in the history of education and of the factors and personages instrumental in bringing about the various steps in the long line of progress.

Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2.

- 2. Philosophy of Education.**—This course is an elaboration of the answer to the age old question "What is it to educate?" It is a systematic treatment of the aim of education, what determines the aim, the content-material and the principles governing the realization of this aim.

Three periods, second semester. Credit of three semester hours.

Alternates with Course 4. Given 1918-1919 and alternate years.

Prerequisite, Philosophy 1, 2, and 3, and Education 1.

- 3. School Organization and Method of Teaching.**—A study of the practical problems of organization and the application of principles.

Two periods, first semester. Credit of two semester hours.

Prerequisite, Philosophy 1, 2, and 3.

- 4. Secondary Education.**—A study of the principles and problems of the secondary school. The course is intended for those who are looking forward to High School and Superintendency positions.

Three periods, second semester. Credit of three semester hours.

Alternates with Course 2. (Omitted 1918-1919.)

Prerequisite, Courses, Philosophy 1, 2, and 3, and Education 1.

- 5. Educational Psychology.**—This course deals with the psychology of learning, methods of mental measurement, mem-

ory and intelligence tests, treatment of precocity and deficiency, &c.

Two periods, second semester. Credit of two semester hours. (Omitted 1918-1919.)

Prerequisite, Philosophy 1 and 3.

6. The High School.—This course is a continuation of Course 3, differing from it in concentrating attention on the problems of organization and method of teaching in the High School.

Two periods, second semester. Credit of two semester hours. (Omitted 1918-1919.)

Prerequisite, Philosophy 1, 2, and 3.

Note. The Pennsylvania School Code requires of all teachers who desire the State certificate courses 1, 3, and 5, in Philosophy, and at least six semester hours in Education. Some of the neighboring States require more.

ECONOMICS.

Professor Ewing.

1. Principles of Economics.—After a brief study of the economic history of England and the United States attention is centered on fundamental economic laws and principles and their application to modern economic problems such as the tariff corporations, transportation, labor problems, and the currency.

Sophomore course for students in Groups III and VI. Junior and Senior course for other students. Three periods thruout the year. Credit of six semester hours.

Prerequisite for all other courses in Economics unless permission is otherwise given by Professor of Economics.

2. Money and Banking.—An examination of the theories of money and credit with a history of the monetary and banking systems of the United States. A study is also made of European and Canadian Banking Systems.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given in 1919-1920 and alternate years.

3. Public Finances.—A study of the principles of public finance with special reference to the United States. The various

tax systems, government debt, and government expenditure are considered.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1919-1920 and alternate years.

4. Sociology.—See Philosophy 4.

5. Business Law.—This course is designed to give the student a knowledge of the legal rights and obligations arising out of common business transactions. The fundamental laws pertaining to contracts, partnerships, corporations, negotiable instruments, sales, etc., are examined.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1918-1919 and alternate years.

6. Accounting.

A. Elementary Accounting.—This course deals with the methods of accounting in the various kinds of business and for the different types of organizations; the handling of single and double entry; the relations of bookkeeping to accounting; and other fundamental features of the subject.

Sophomore course. One lecture and three hours of laboratory work per week thruout the year. Credit of six semester hours.

Prerequisite for Accounting B.

B. Advanced Accounting.—This course deals with some of the more advanced phases of accounting, such as depreciation, the reserve, goodwill, deficiency accounts, realization and liquidation, cost accounting and auditing.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1919-1920 and alternate years.

7. Labor Problems.—A study of the relation of the employee to the employer, including such subjects as child and woman labor, the sweating system, poverty, unemployment, immigration, industrial conciliation and arbitration, employer's liability laws, industrial insurance, profit sharing and co-operation. The work of labor unions in relation to labor problems is emphasized.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1918-1919 and alternate years.

- 8. Business Organization.**—A study of the various types of business organization, their characteristics and history. Public policy with reference to corporations—especially transportation corporations—receives special attention.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1918-1919 and alternate years.

- 9. Railway Transportation.**—A survey of the development of transportation and a discussion of its social and economic influence. Railway problems in the United States. Methods of competition, combination, discrimination and investments. Stock watering and speculation. Government regulation. The problems after the war of federal administration and ownership of the railroads.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1919-1920 and alternate years.

- 10. Rural Economics.**—Fundamental problems in farm management as ownership and tenancy, diversification of crops, large and small scale production, tools and buildings, buying and selling, farmers' accounts, credits and loans.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1919-1920 and alternate years.

POLITICAL SCIENCE.

Professor Ewing.

- 1. Principles of Political Science.**—Origin and nature of the state. Sovereignty. Forms of government. Theories of state functions. Citizenship. The constitution of the state. Distribution of the powers of government. The electorate, the executive, the legislative and the judicial departments. Federal, local, colonial and party government.

Sophomore course for students in Groups III and VI. Sophomore, Junior and Senior course for other students. Three periods, first semester. Credit of three semester hours.

Prerequisite for other courses in Political Science.

2. American Government and Politics.—Colonial origins of American institutions. Evolution of federal and state constitutions. Evolution of political issues. Development of party machinery. General features of federal and state government. Executive, legislature, and judiciary. Administration. Foreign affairs. Commerce. Taxation and finance. Municipal organization and functions. Local rural government.

Sophomore course for students in Groups III and VI. Sophomore Junior and Senior course for other students. Three hours, second semester. Credit of three semester hours.

3. Comparative Government.—A study of the structure and functioning of European governments with constant reference to American federal and state governments.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1918-1919 and alternate years.

4. Constitutional Law.—A study of the American Constitution viewed in the light of the Supreme Court decisions. This course is given for those who wish to make an extended study of the basic principles of United States Government.

Junior and Senior course. Three hours, second semester. Credit of three semester hours. Given 1919-1920 and alternate years.

5. International Law.—The development of the rules of international law, the rights and obligations of nations in times of war and of peace, the settlement of international disputes are considered.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1919-1920 and alternate years.

6. Conservation of National Resources.—Conservation defined. Policies public and private. Conservation in relation to industrial evolution. Forests and minerals. Conservation and social energy. Idleness, ignorance, vice. Civilization as elimination of waste.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1919-1920 and alternate years.

BIOLOGY AND HYGIENE.

Professor Stahley.

Courses 1 to 7 are required studies in Group V. Course 8 is required of students in Municipal Engineering. All the courses are open as electives to those qualified to take them. The special pre-medical courses are 1, 2, and 3, required by the Pennsylvania State law. They are also valuable for general culture and as a preparation for teaching in secondary schools.

The work in all courses is carried on by lectures, demonstrations, dissections, drawings, daily quizzes, and stated examinations.

- 1. General Biology.**—This course acquaints the student with microscopic technique and general laboratory methods, while he studies selected types of plants and animals, taken from the lower forms of life. The purpose is to ascertain fundamental facts of structure and life processes, with the significant relationships in the two great kingdoms of organic nature.

Junior Course. Three periods for twelve weeks. Two hours of lectures, and six hours of laboratory work.

- 2. Vertebrate Zoölogy.**—The essential features of their variations, in the vertebrate type of animals, are carefully considered, while representative forms are being dissected, beginning with the highest class, the Mammalia, and passing down to the lowest Chordates. Questions relating to comparative morphology and physiology of Vertebrates are freely discussed.

Junior course. Three periods for fifteen weeks. Two hours lectures, and six hours of laboratory work.

- 3. Invertebrate Zoölogy.**—Selected types of Invertebrates are dissected. The basic structural scheme which obtains in the various groups, their adaptations to environmental conditions, and their economic value, are among the subjects which claim attention. The bearing of the theory of evolution in animal development is discussed during the year.

Junior course. Three periods for fifteen weeks. Two hours of lectures and six laboratory hours. Courses 1, 2, 3 credit of eight semester hours.

- 4. Human Anatomy and Physiology.**—Special attention is given to osteology, joints, ligaments, and muscles. Tramond's preparations, consisting of real bony joints, with accurately placed artificial ligaments, and Azou's dissectible manikin, provide ample facilities for this part of the work. In this, as in all the branches of the course, physiological processes are constantly discussed.

Senior course. Three periods for seventeen weeks. Two hours of lectures, and six hours of laboratory work. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3.

- 5. Mammalian Histology.**—With the aid of prepared microscopic slides, the pupil studies the minute anatomy of the different tissues of the body. He also learns practically how to fix, harden, imbed, section, stain, and mount the important tissues.

Senior course. Three periods for twelve weeks. Two hours of lectures and six hours of laboratory work. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

- 6. Embryology.**—The principles of the maturation and fertilization of the germ elements are considered. The development of the chick is studied. Entire mounts are made, as well as mounts of serial sections of the incubating egg, from the first hour of incubation to the fifth day, when the organs are practically all formed.

Senior course. Three periods a week for six weeks. Two hours of lectures, and six hours of laboratory work. Credit of one semester hour.

Prerequisite, Courses 1, 2, and 3.

- 7. Botany.**—This course is in great part confined to the Spermatophyta, and continues the study of plants as begun in the General Biology course, where type forms from the Thallophytes, Bryophytes and Pteridophytes were considered. Morphology, physiology, and ecology are among the topics mostly emphasized. The study includes lectures, recitations, practical laboratory work and field excursions. Considerable attention is paid to plant analysis in the spring months.

Junior course. Two periods thruout the year. One hour recitation and two hours of laboratory work. Credit of four semester hours.

8. Sanitation and Bacteriology.—This is a course in municipal sanitation. The lecture part of the work is comprised in Course 9, second semester. The bacteriology of water analysis is pursued in a well-equipped laboratory.

Senior year. Laboratory, three periods for six weeks, one semester hour. Lectures, one semester hour. Total credit: two semester hours.

9. Personal and Public Hygiene (Sanitary Science).—During the first semester are discussed the questions of the waste and conservation of individual vitality in their application to efficient citizenship. During the second semester consideration is given to those essential principles of public hygiene which are necessary in protecting the health of communities.

Lectures, one hour weekly thruout the Senior year. Credit of two semester hours.

10. Physical Culture.—This end is sought under medical guidance in the Gymnasium during the winter months. A physical examination of each student is made when he enters college, and such kinds of gymnastic exercises are prescribed as seem desirable. The purpose is to encourage the promotion of health and physical vigor as necessary for successful mental application. A complete course of health lectures is annually given to the entering class.

Two weekly drills are required of all Freshmen from December 1 to March 15. Credits are allowed for attendance and attention.

CHEMISTRY.

Professors Breidenbaugh and Stover, Mr. Dickson and Assistants.

The courses in chemistry are not designed to prepare specialists in any department of the subject, but to give a general training in the science. The successful completion of these courses will prepare the student to enter on graduate or professional studies in any leading university, or qualify him for a more successful pursuit of any technical business, or fit him to teach chemistry in secondary schools.

The instructors are in daily attendance during the college term from 8 to 12 and from 1 to 4, except on Saturday afternoons.

- 1. General Chemistry.**—No previous acquaintance with the subject is required. Those offering chemistry for admission will be allowed to substitute, as far as is best for the individual, from Course 2. The general principles and the fundamental laws of the science are included in the course, which consists of lectures, readings from approved text-books—such as Remsen's "College Chemistry," Newell's "Inorganic Chemistry for Colleges," Kahlenberg's "Outlines of Chemistry"—and laboratory work for which careful record in note-books is required. There are daily quizzes and frequent examinations. The last several weeks of the course are devoted to a practical review and examination in the determination of a certain number of substances, based on the results of previous study.

*Three lectures and six laboratory hours weekly for one year.
Credit of six semester hours.*

- 2. Qualitative Analysis.**—The student, following an outline prepared for the purpose, becomes acquainted with the general reactions of the elements of the several groups and from these data constructs the scheme of analysis which is applied in a number of determinations. There is constant supervision and personal conference over the work. Reference book, Fresenius' "Qualitative Analysis."

*One lecture and nine laboratory hours weekly for one year.
Credit of six semester hours.*

Prerequisite, 1.

- 3. Quantitative Analysis.**—While such lectures as are desirable are given, this is essentially a personal laboratory course. An assigned minimum of work is required. Reference book, Fresenius' "Quantitative Analysis."

Nine hours of laboratory work weekly for one year. Credit of six semester hours.

Prerequisite, 1 and 2.

- 4. Organic Chemistry.**—Lectures and laboratory work. The laboratory work is partly preparations and partly the approximate analysis of animal and plant substance.

A. Three lectures weekly during the first semester. Credit of three semester hours.

B. Group IV. Eighteen laboratory hours weekly during the first semester. Credit of six semester hours.

C. Group V. Nine laboratory hours weekly during the year. Credit of six semester hours.

Prerequisite, 1 and 2.

- 7. Special Quantitative Methods.**—Students who are qualified are offered courses in advanced and applied analysis—such as mineral, ore, and water analysis, the examination of food stuffs and manufactured articles.

Such hours as may be arranged for during Senior year, or during Junior year by such as have completed the other work in the department. Credit of six to ten semester hours.

- 8. Industrial Chemistry.**—A course of class-room exercises. *Three periods, second semester. Credit of three semester hours. Prerequisite, 1, 2, and 3.*

GEOLOGY AND MINERALOGY.

Professor Breidenbaugh.

- 1. Dynamical Geology.**—This course of lectures gives the student an acquaintance with the facts concerning inorganic geology, and a discussion of the dynamical agencies which have been operative in bringing the earth to the condition in which we now find it.

Field work and the preparation of papers from personal observation and practical application to the work. Frequent examinations are held.

Two periods, first semester. Credit of two semester hours.

- 2. Historical Geology.**—A comprehensive discussion of the principles of evolution, with illustrations from historic geology.

The student is assigned readings from the text-books of Dana, Le Conte, Chamberlain and Salisbury, and other authors.

Two periods, second semester. Credit of two semester hours.

- 3. Mineralogy.**—Following a short course of practical work in Crystallography, there is a series of determinations of not

less than one hundred minerals by their physical and blowpipe characteristics.

Two periods thruout the year. Credit of four semester hours.

Prerequisite, Chemistry 1.

MATHEMATICS AND ASTRONOMY.

Acting Professor Williams and Assistant.

1. **Plane Trigonometry and Algebra.**—Definitions and properties of the trigonometric functions; algebraic theory of exponents and indices; theory and use of logarithms; solutions of triangles.

Required of all Freshmen. Three periods during the first semester. Credit of three semester hours.

2. **Advanced Algebra.**—Elementary theory of equations; complex numbers, De Moivre's theorem and Argand's diagram; Binomial theorem.

Required of Freshmen in Groups I-VI. Three periods during the second semester. Credit of three semester hours.

3. **Advanced Algebra.**—A thoro introduction to graphs and determinants, limits and series, with the purpose of adequately preparing the students for the study of Analytic Geometry and the Calculus.

Required of Freshmen in Groups VII-X, and of Sophomores in Groups IV and V. Elective for Sophomores in Groups I-II, and VI. Three periods during the first semester. Credit of three semester hours.

4. **Plane Analytic Geometry.**—The locus of an equation; the line; the conic sections and other curves, their tangents, normals and areas; transformation of coördinates.

Required of Freshmen in Groups VII-X. Four periods during the second semester. Credit of four semester hours.

5. **Elementary Analysis.***—This course is intended primarily for those who do not intend to continue the study of Mathematics, but who wish to obtain some knowledge of the

* Students who intend taking Math. 6 are advised to take Math. 4 instead of Math. 5 in preparation.

fundamental principles of Analytic Geometry and the Calculus.

Required of Sophomores in Groups IV and V. Elective for Sophomores in Groups I-III, VI. Three periods during the second semester. Credit of three semester hours.

- 6. Differential and Integral Calculus.**—Theory of limits; fundamental formulae of differentiation with applications, including maxima and minima and rates; series and the expansion of functions; other applications. The indefinite and definite integral; reduction formulae; applications including areas and volumes.

Required of Sophomores in Groups VII-X. Elective for those who have taken Math. 4 or 5. Four periods thruout the year. Credit of eight semester hours.*

- 7. Differential Equations.**—The theory, together with the principles and devices, which will enable the student to integrate the ordinary or partial differential equations he is likely to encounter.

Elective for those who have taken Math. 6. Three periods during the first semester. Credit of three semester hours.

- 8. Solid Analytic Geometry.**—An introduction to the treatment of questions in three-dimensional Geometry by Algebraic methods.

This course is elective for all students prepared to pursue it and is a prerequisite to Physics 8. 9. Three periods during the second semester. Credit of three semester hours.

- 9. Introduction to Analysis.**—Topics from the Calculus not given in Math 6, together with an introduction to the Theory of Functions of Real Variables.

Elective for those who have taken Math. 6. Two periods thruout the year. Credit of four semester hours. (Omitted 1918-1919.)

- 10. Astronomy.**—A practical course in the determination of meridian, longitude, and time, and including the formulae of Spherical Trigonometry and the solution of spherical triangles.

Required of Juniors in Groups VII and VIII. Two periods for eight weeks, or the equivalent. Hours to be arranged. Credit of one semester hour.

* Students who intend taking Math. 6 are advised to take Math 4 instead of Math. 5 in preparation.

PHYSICS.

Professor Parsons, Assistant Professor Cessna, and Mr. Maxwell.

- A. Elements of Physics.**—A course covering in an elementary way the general subject of Physics, largely descriptive, and requiring no previous knowledge of the subject. The instruction is given by lectures illustrated by experiment, recitations, and problems. This course is designed for those who can devote no more than one year to Physics, and not for those who will pursue the subject further.

Three lectures per week thruout the year. Credit of six semester hours.

B. Laboratory Course Accompanying Physics A.

Four laboratory hours per week. Credit of three semester hours.

- 1. General Physics.**—Mechanics of solids and fluids, properties of matter, sound and heat. The first part of a course in General Physics extending thru two years, required of all students in the Scientific and Engineering Groups, and forming the basis of the more specialized courses. The instruction is given by lectures illustrated by experiments, recitations, and problems assigned for work outside of the class. No previous knowledge of the subject is assumed, but a high school course is advantageous as preparation.

Three hours per week thruout the year. Credit of six semester hours.

- 2. General Laboratory Physics.**—A laboratory course in mechanics of solids and fluids, properties of matter, sound and heat, designed to accompany Course 1. (Excepting in special cases the two courses must be taken together.) It is desirable, tho not required, that the student should have had an elementary laboratory course in Physics.

Three or six hours per week thruout the year. Credit of two or four semester hours.

- 3. General Physics.**—Electricity and magnetism, and light. A continuation of Course 1, emphasizing particularly elec-

tricity and magnetism, and including the fundamentals of photography. Lectures, recitations, and problems.

Three hours per week thruout the year. Credit of six semester hours.

Prerequisite, Physics 1 and Mathematics 3, 4.

- 4. Physical Measurements.**—Laboratory experiments in electricity and magnetism, and light. A continuation of Course 2 and designed to accompany Course 3. Some experiments in electrical measurements, diffraction and polarization of light, and photography, are included.

Three to six hours per week thruout the year. Credit of two to four semester hours.

Note:—During 1918-1919, Courses 1 and 2 were combined with Courses A and B (on account of conditions growing out of the presence of the S. A. T. C.) In 1919-1920 Physics 3 and 4 will consist of the more advanced work in Mechanics and Heat in addition to Electricity, Magnetism and Light, and Courses 1 and 2 will probably be modified. Courses A and B may be combined with Courses 1 and 2.

- 5. Mechanics.**—A lecture course, based on calculus, treating of statics, dynamics of translation and rotation, moments of inertia, elasticity, and vibrations, and accompanied by laboratory work in these subjects.

Two lecture hours and three laboratory hours per week, first or second semester. Credit of three semester hours.

Prerequisite, Physics 1, 3, and Mathematics 6.

- 6. Electrical Measurements.**—A lecture and text-book course in the theory of electricity and magnetism, electrical measurements and measuring instruments, accompanied by laboratory work.

Two hours lecture and class work, and three or six laboratory hours thruout the year. Credit of six or eight semester hours.

Prerequisite, Physics 1-4, Mathematics 6.

- 7. Recent Advances in Physics.**—Radioactivity, discharge of electricity thru gases, the electron theory, and other topics. Lectures illustrated by experiments.

Two lectures per week thruout the year. Credit of two semester hours.

Prerequisite, Physics 1 and 3, and Mathematics 6.

- 8, 9. Mathematical Physics.**—Lecture course in mathematical Physics for graduate students (or other advanced students). The two courses alternate in successive years, forming together a complete course, but the topics treated may vary from year to year. Such subjects as mechanics, hydromechanics, the kinetic theory of gases, the theory of sound, electricity and magnetism, physical optics, and the electro-magnetic theory, are treated.

Two or three lectures per week thruout the year.

Prerequisite, Physics 1-4, and Mathematics 6.

- 10. Advanced Laboratory Physics.**—This comprises all the advanced laboratory work not included in the preceding courses, and is designed for graduate students and other specializing in Physics. The experiments or problems assigned are variable and may include research on some assigned topic.

The course may be taken thru more than one year, credit being given proportional to the work done.

- 11. Physics Seminary.**—A meeting, for one hour a week thruout the year, of the advanced students, at which papers on assigned topics are presented, current topics are discussed, and reports given of recent work of investigators (obtained from reading the journals).

Credit of two semester hours.

LECTURESHIP ON CONSTITUTIONAL LAW.

Henry Wolf Bickl , Esquire.

Four lectures on the Constitution of the United States; including (a) a discussion of the American Doctrine of Constitutional Law, and (b) a consideration of the commerce clause, (c) of the clause forbidding the impairment by the States of the obligation of contracts, and (d) of the guaranties of personal liberty and equality contained in the Fourteenth Amendment.

LECTURESHIP IN SOCIOLOGY.

Mrs. Mary G. Stuckenberg has founded a Lectureship in Sociology in honor of her late husband, J. H. W. Stuckenberg, D.D., LL.D., by the terms of which the College will have annually a lecture on some phase of Sociology from the standpoint of Christian Ethics by specialists in this important field. The lecture is given at such a time as is convenient to the lecturer chosen for the year.

ENGINEERING COURSES.

Full courses are offered in

**Civil Engineering,
Municipal Engineering,**

**Mechanical Engineering,
Electrical Engineering.**

All engineering students pursue the same subjects for the first two years. At the end of that time it is believed that most men will be able to make an intelligent choice between Civil and Municipal Engineering on the one hand, and between Mechanical and Electrical Engineering on the other. At the end of the third year a civil engineering student decides further between the general Civil Engineering course (Group VII) and the Municipal Engineering course (Group VIII). At the same point in his studies a mechanical engineering student decides between the course in Mechanical Engineering (Group IX) and that in Electrical Engineering (Group X).

Civil Engineering is an increasingly comprehensive term. Beside municipal engineering it includes among other subdivisions, topographic, railroad, and structural engineering. The Municipal (Sanitary) Engineering course is offered for those who wish to specialize somewhat in subjects relating more particularly to the problems of sanitation and civic betterment with which the engineering department of a modern city is concerned. The field for the mechanical engineer also has broadened of late, resulting in its subdivisions into branches of activity which call for technical knowledge in special fields. No attempt has been made in the following courses to meet these special demands, as it is the aim of the department to graduate men well grounded in the fundamentals and sufficiently broad in training to fill positions of some responsibility in any part of the field. Students interested in mechanical engineering are advised to follow Group IX unless especially interested in applied electricity; in that case they are recommended to the course in Electrical Engineering, Group X.

Engineering graduates not infrequently find employment in positions in which some knowledge of a branch of engineering other than that for which they have been trained is necessary or valuable. The engineering instruction is on this account designed to be broad and fundamental, and subjects which tend toward extreme specialization are not offered.

An increasing proportion of graduates in engineering engage

in callings more or less closely related to engineering, such as manufacturing, contracting, or commercial lines. In view of this there have been included in the engineering courses such subjects as will lay the foundations of a broad scientific education.

The following seven technical subjects underlie all engineering training, and are required of all students in Groups VII, VIII, IX and X.

- 1. Elementary Mechanical Drawing.**—Use of instruments, orthographic, isometric and cabinet projections, simple sections, intersections and developments, lettering, sketching, tracing and blueprinting. Text-book, French's "Engineering Drawing."

Three hours thruout the year. Credit of two semester hours.

Note. The College provides drawing desks, boards, etc., but each student furnishes his own drawing outfit, costing about eighteen dollars. Students are urged to avoid the purchase of cheap instruments which soon become worthless. Engineering students use their drawing instruments thruout their course and for years afterward. The purchase of an outfit of good grade is therefore economy.

- 2. Descriptive Geometry.**—The first semester's work comprises descriptive geometry, problems relating to the point, line, and plane in space, followed by a thoro drill in sections, intersections, and developments, with applications to engineering and architectural problems. The instruction is designed to develop in the student the power of concise reasoning.

Two hours of recitation and four hours of drawing weekly, first semester. Credit of three semester hours.

Prerequisite, Course 1.

- 3. Mechanics (A). Statics and Dynamics.**—Forces in equilibrium, simple structures, translation and rotation, work, energy, power. Text-book, Maurer's "Technical Mechanics."

Three recitations weekly thruout the year. Credit of six semester hours.

Prerequisite, Physics 1 and 2, Mathematics 3 and 4.

- 5. Hydraulics.**—A study of the mechanics of water at rest and in motion, with applications to a variety of problems relating to the pressure of water and to its flow in natural and artificial channels, pipes, etc. Text-book, Merriman's "Treatise on Hydraulics."

Three recitations weekly first semester. Credit of three semester hours.

Prerequisite, Engineering 3 and Mathematics 5.

- 6. Materials Testing.**—Recitation and laboratory course in the study of the properties of engineering materials. In the first semester the standard tests of cement, mortar, and sand are made and compared. The common tensile, compressive, and transverse tests on steel, timbers, and concrete are made and discussed. The solution of practical problems is emphasized. The first semester's work is required of all engineering students. During the second semester the remaining common materials are tested, and the change in the properties of iron and steel due to heat treatment is taken up. The work of this semester is required only of students in Groups IX and X. Text-book, Boyd's "Strength of Materials."

Three recitations and three laboratory hours weekly, first semester. Credit of four semester hours. Three laboratory hours weekly, second semester. Credit of one semester hour.

Prerequisite, Engineering 3 and 4, and Mathematics 5.

- 7. Elements of Electrical Engineering.**—The application of the fundamentals of electricity and magnetism to electrical engineering practice. Theory, structure, and operation of electrical machinery. Recitation work supplemented by simple laboratory experiments.

One recitation and three laboratory hours weekly, first semester; two recitations and three laboratory hours, second semester. Credit of five semester hours.

Prerequisite, Physics 3, and 4, and Engineering 5.

- 11. Plane Surveying.**—This course gives drill in the use of the more common surveying instruments, in the best methods of keeping notes, and in the computations and mapping required in connection with the usual work of a surveyor. Text-book Tracey's "Plane Surveying."

Two hours of recitation and four hours of drawing weekly, second semester. Credit of three semester hours.

CIVIL AND MUNICIPAL ENGINEERING.

Professor Clutz.

- 12. Surveying (A).**—Field work done during a period of three weeks immediately preceding the beginning of the Junior year.* It consists of drill in the use of the more common surveying instruments, supplemented by daily recitations designed to coördinate the instruction. Plotting the notes of the survey, tracing and blue-printing the map, and additional drill in plain lettering. Text-book, Tracy's "Plane Surveying."

Three weeks (14½ hours) in August and September. Total credit of three semester hours.

Prerequisite, Course 2.

- 13, 14. Surveying (B).**—The field work is done during a period of three weeks immediately preceding the beginning of Senior year.* Topographic surveying, using a variety of methods and instruments, including the plane table, supplemented by daily recitations. A short railroad survey and location. Adjustments of instruments. The office work, done in term time, includes instruction in topographic drafting and the use of topographic maps, also the treatment of various subjects in higher surveying. Text-book, Wilson's "Topographic, Trigonometric, and Geodetic Surveying."

Three weeks (14½ hours) in August and September. Two hours recitation and four hours of drawing, first semester. Total credit of four semester hours.

Prerequisite, Course 11, 12.

- 16. Railroads (A).**—A course in the mathematics of railroad curves, — simple, compound, and vertical; including switches and spirals. Earthwork calculation and the construction of mass diagrams. Text-books, Allen's "Railroad Curves and Earthwork," and "Field and Office Tables."

Four recitations weekly, second semester. Credit of four semester hours.

Prerequisite, Course 11, 12.

* The Summer Course in 1919 begins at 8 A. M. on Tuesday, Aug. 26.

- 17. Railroads (B).**—The necessary preliminary surveys are made during the preceding summer field work (Course 13). Course 17 includes making the plans, calculations, etc., involved in the preparation of a full report on the proposed construction, including its cost. Economics of railroad construction.

Six hours of drawing and computation weekly, second semester. Credit of two semester hours. (Omitted 1919-1920.)

- 18. Structural Design (A).**—Stresses in framed structures, principally roof trusses and bridges of various types. Graphical methods of solution are employed. Text-book, Johnson, Bryan-Turneure's "The Theory and Practice of Modern Framed Structures," Part I.

Two hours of recitation and four hours of drawing weekly, first semester. Prerequisite, Course 3.

- 19. Structural Design (B).**—A course in the strength of materials as applied to the analytical design of structures of wood and steel. Beginning with beams the student finally makes all the calculations necessary in the complete design of a plate girder and trusses of the riveted and pin connected types. Text-book, Johnson, Bryan-Turneure's "The Theory and Practice of Modern Framed Structures," Part III.

Given in the second semester, Junior year, and first semester, Senior year. Two hours recitation and four hours computation or drafting weekly in the Junior year; three hours recitation and six hours computation or drawing in the Senior year.

- 28. Structural Design (C).**—A course in the use and design of reinforced concrete.

Given second semester, Senior year. Two hours recitation and four hours computation or drafting. Credit of two semester hours.

- 20. Structural Drafting.**—The making of detailed drawings for the component parts of a steel structure. Conformity with the best practice is required, and the drawings are carefully checked.

Six hours of drawing weekly, second semester. Credit of two semester hours. (Omitted 1919-1920.)

21. Contracts and Specifications.—The elements of contract law as applied to the mutual relations of engineer, contractor, and owner. Critical review of typical specifications and practice in specification writing. Text-book, Kirby's "Elements of Specification Writing."

Two recitations weekly, second semester. Credit of two semester hours. (Omitted 1919-1920.)

22. Masonry.—Design and construction of stone and concrete structures, heavy foundations, arches, walls, and dams. Instruction is in part by recitation, but includes drafting-room work in the design of several typical structures. Text-book, Baker's "Masonry Construction."

Two recitations and three hours of drawing weekly, first semester. Credit of three semester hours. (Omitted 1919-1920.)

23. Highways.—Recitations on the design, construction, and maintenance of roads and pavements, with especial consideration of the exigencies of present-day traffic. Text-book, Blanchard and Drowne's "Highway Engineering."

Two recitations weekly, second semester. Credit of two semester hours. (Omitted 1919-1920.)

24. Water Supply Engineering.—The quantity and quality of water from various sources. Works for the collection and storage of water, for its purification and for its distribution. Text-book, Turneaure and Russell's "Public Water Supplies."

Two recitations weekly, second semester. Credit of two semester hours.

25. Sewerage.—Various types of design and construction are discussed in recitations. Plans for a small sewer system are made by each student. Modern methods for the purification and disposal of sewage and garbage. Visits are made to plants under construction and in use. Text-book, Fowell's "Sewerage."

Two recitations weekly, second semester. Credit of two semester hours.

26. Civil Engineering Seminary.—Oral and written reviews and discussions of current technical articles.

One hour weekly, throught the year. Credit of two semester hours. Open only to Seniors in Groups VII and VIII.

MECHANICAL ENGINEERING.

Professor Rosenstengel.

- 31. Shop Work (A).**—Simple exercises in the formation of green sand moulds, supplemented by lectures on modern foundry practice. Bench and lathe work in wood, elements of pattern making.

Six laboratory hours weekly, first semester. Credit of two semester hours.

- 32. Shop Work (B).**—Forge practice in iron and steel. Shaping, hardening, and tempering of tools. Machine and bench work in metals. Lectures on modern shop practice.

Six laboratory hours weekly, second semester. Credit of two semester hours.

- 33. Kinematics.**—Theory of mechanisms, instant centers, cams, gears, linkages, velocity and acceleration diagrams, etc. Recitation work supplemented by the solution of practical problems in the drawing room. Text-book, Barr and Wood's "Kinematics of Machinery."

Two recitations and six hours of drawing weekly, first semester. Credit of four semester hours.

Prerequisite, Course 2.

- 34. Machine Design (A).**—An elementary course showing the application of the fundamentals of mechanics and kinematics to machine design. Selection of mechanisms for specified work, analysis of energy and force problems in machines, and proportioning of detailed parts from theoretical and practical considerations. Text-book, Kimball and Barr's "Elements of Machine Design."

Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Course 6 (1st semester), 4, and 33.

- 35. Machine Design (B).**—Application of principles of Course 34 to the design of two typical machines, including all necessary computations; working drawings of most important parts, and a finished assembly drawing. Text-book, Kimball and Barr's "Elements of Machine Design."

One recitation and six hours of drawing weekly thruout the year. Credit of six semester hours.

Prerequisite, Course 34.

36. Heat Power Engineering (A).—Thermodynamics of gases and vapors, theoretical gas cycles, application of theory to problems of commercial heat engines, engine performances and efficiencies. Text-book, Hirshfield and Barnard's "Elements of Heat Power Engineering."

Three recitations weekly thruout the year. Credit of six semester hours.

Prerequisite, Mathematics 5, and Physics 1 and 2.

37. Heat Power Engineering (B).—A continuation of Course 36. Fuels, combustion, boilers, gas engines, steam engines and turbines, power house auxiliaries, etc. Efficiency and economy of operation. Selection and combination of elements for power houses. This study covers the theory necessary for Course 38. Text-books, Hirshfield and Barnard's "Elements of Heat Power Engineering," and Gebhardt's "Steam Power Plant Engineering."

Three recitations weekly, first semester. Two recitations weekly, second semester. Credit of five semester hours.

Prerequisite, Course 36.

38. Power Plant Design.—Design of a typical power plant, selection and arrangement of main units and auxiliaries. An outline drawing is made showing the location and arrangement of boilers, turbines, condensers, pumps, etc., the provision for coal and ash handling, and storage. Economic features of power house design emphasized. Reference book, Gebhardt's "Steam Power Plant Engineering."

Six hours of computation or drawing weekly, second semester. Credit of two semester hours.

May be taken only in conjunction with Course 37.

39. Mechanical Engineering Laboratory.—Calibration of common engineering measuring instruments, such as steam gauges, thermometers, indicator springs; determinations of quality of steam; measurements of power; efficiency tests of boilers, gas engines, pumps, etc. Computation periods.

Three laboratory hours weekly thruout the year. Credit of two semester hours.

Prerequisite, Course 36.

- 40. Mechanical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.
One hour weekly, second semester. Credit of one semester hour. (Open only to Seniors in Group IX.)

ELECTRICAL ENGINEERING.

Professor Rosenstengel.

- 45. Theory of Electrical Machinery.**—Fundamentals of the electric and magnetic circuit; representation of alternating currents and voltages by vectors and complex quantities; study of the alternating current circuit; theory of transmission lines; transformers, alternators, synchronous and induction motors, direct current machines, etc. Text-books, Christie's "Electrical Engineering" and Gray's "Electrical Machine Design."
Five recitations weekly, first semester. Two recitations weekly, second semester. Credit of seven semester hours.
Prerequisite, Course 7.

- 46. Characteristics of Electrical Machinery.**—This course supplements the work of Course 45. Problems in alternating current circuits. Outline design and predetermination of performance characteristics of transmission lines, transformers, alternators, alternating current motors and direct current generators and motors. Practice is given in the use of standard hand books. Reference book, Gray's "Electrical Machine Design."
Three hours of computation weekly, first semester. Nine hours of computation weekly, second semester. Credit of four semester hours.
May be taken only in conjunction with Course 45.

- 47. Electrical Engineering Laboratory.**—Elementary and advanced experimental work in electrical engineering: the study of polyphase alternating current circuits, shape of A. C. waves, determination of the magnetic properties of steel and iron; commercial testing of alternators, transformers, synchronous motors, induction motors, D. C. machines, etc. Text-book, Karapetoff's "Experimental Electrical Engineering."
Six laboratory hours and one report weekly thruout the year. Credit of four semester hours.
Prerequisite, Course 7.

- 48. Electrical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.
One hour weekly, second semester. Credit of one semester hour. (Open only to Seniors in Group X.)

Trips of Inspection.

Several short tours are arranged during the course for the inspection of engineering structures, power plants, shops, manufacturing establishments, etc., in the vicinity. Reports are prepared by each student from his individual notes.

Engineering Laboratory.

A departmental library and reading room of reference books, periodicals, and technical reports is being built up in connection with the College Library. Students have access to the following publications:

"Engineering News-Record," "Municipal Journal," "Railway Review," "Electrical World," "Industrial Management," and "American City."

Engineering Equipment.

For a detailed description of the equipment in engineering see page 126.

MILITARY SCIENCE AND TACTICS.

Captain Tuthill and Color Sergeant Allen.

As a part of the program for national preparedness, Congress by Act of June 3, 1916, authorized the establishment and maintenance in civil institutions of learning fulfilling certain requirements, of units of the Reserve Officers' Training Corps, so that in time of national emergency there may be a sufficient number of educated men, trained in military science and tactics, to officer and lead intelligently the large armies upon which the safety of the country will depend. Under the provisions of this Act the President of the United States has established an infantry unit, senior division, of the Reserve Officers' Training Corps in this College and has detailed a regular army officer to serve here as Professor of Military Science and Tactics and a noncommissioned officer to serve as his assistant. In order to encourage students to enter this corps said Act of Congress makes very liberal provisions furnishing the members free of charge all the needed equipment in arms, ammunition, uniforms, and, in the case of those taking the advanced course, additional uniforms, training camp expenses, and an allowance in cash equal to the regular army garrison ration. The work includes lectures and classroom work as well as military drill, target practice and gymnastic exercises. The mental as well as physical benefits which a student may derive from this course are obvious; and it supplies in the most approved form that element of training in discipline and obedience to authority which has been largely lacking in the educational system of our country. There is a great demand thruout the country for teachers of high school grades who are able to give military instruction.

The courses as outlined on the following pages are prescribed by the War Department to serve as a guide only for all R. O. T. C. units. Each unit has local advantages along certain lines. In this unit a special study of the battle of Gettysburg will be made. The battlefield covers about twenty-five square miles of ground but the College is centrally located and no part of the field is more than four miles from the campus. The study will include the battle in detail, the terrain, and the results. When this study

is completed the same terrain is used in a map maneuver under modern conditions of artillery, motor trucks, machine guns, and high power rifles.

A course if elected becomes exactly like a required course in mathematics or history, and the student must complete it, but other than this it involves no compulsory military obligations.

The work is nearly all practical and the maximum of physical training is embodied. There is considerable range work with the U. S. Rifle, model of 1917, and with the U. S. Revolver, model of 1917.

Distinctive insignia, to be worn on the upper part of the left forearm, is issued to each student to indicate his rank as a cadet, and additional insignia is issued to indicate his rating for excellence obtained during the course of instruction and also a badge for proficiency in target practice for those who can earn it.

The course in Military Science and Tactics is divided into two parts, each one requiring two years of work. For the amount of college credit see the outline of Groups, pp. 32-58.

FIRST COURSE.

Any student electing this course must devote an average of at least three hours per week for two successive years to the work required (First Year and Second Year, pp. 100-101).

ADVANCED COURSE.

When any member of the Reserve Officers' Training Corps has completed (here or elsewhere) the first two academic years of service, and has been recommended for further military training by the President of the College and the Professor of Military Science and Tactics, he will be furnished by the U. S. Government commutation of subsistence (an allowance) equal to the regular garrison ration prescribed for the Army. This allowance now is 40 cents per day, extending thru and including the summer recess between third and fourth years. A student electing to take this advanced course will be required to devote an average of at least five hours per week to the work during the remainder of his college course (Third Year and Fourth Year, pp. 101-102). A considerable portion of this instruction will be given in other departments of the College in the classes in history, economics, political science, hygiene, sanitation, etc., so that the five required hours per week will, as a rule, not add appreciably to the time

required during the first two years. He must also attend the training camps prescribed by the Secretary of War during the third and fourth years, his transportation to and from these camps, and his subsistence while there being paid for by the U. S. Government.

OUTLINE OF THE COURSES IN MILITARY SCIENCE AND TACTICS.

First Year.

1. Military Art.—Three hours a week during the first semester.

(a). Practical. Weight 10.

Physical drill (Manual of Physical Training—Koehler); Infantry drill (U. S. Infantry Drill Regulations), to include the School of the Soldier, Squad and Company, close and extended order. Preliminary instruction sighting position and aiming drills, gallery practice, nomenclature and care of rifle and equipment.

(b). Theoretical. Weight 4.

Theory of target practice, individual and collective (use of landscape targets made by U. S. Military Disciplinary Barracks, Fort Leavenworth, Kans.); military organization (Tables of Organization); map reading; service of security; personal hygiene.

2. Military Art.—Three hours a week during the second semester.

(a). Practical. Weight 10.

Physical drill (Manual of Physical Training—Koehler); Infantry drill (U. S. Infantry Drill Regulations), to include School of Battalion, special attention devoted to fire direction and control; ceremonies; manuals (Part V, Infantry Drill Regulations); bayonet combat; intrenchments (584-595, Infantry Drill Regulations); first-aid instruction; range and gallery practice.

(b). Theoretical. Weight 4.

Lectures, general military policy as shown by military history of United States and military obligations of citizenship; service of information, combat (to be illustrated by small tactical exercises); U. S. Infantry Drill Regulations, to include School of Company; camp sanitation for small commands.

Second Year.

3. Military Art.—Three hours a week during the first semester.

(a). Practical. Weight 10.

The same as Course 2(a). Combat firing, if practicable, but collective firing should be attempted in indoor ranges by devices now in vogue at United States Disciplinary Barracks.

(b). Theoretical. Weight 4.

United States Infantry Drill Regulations, to include School of Battalion and Combat (350-622); Small-Arms Firing Regulations; lectures as in (b) Course 2; map reading; camp sanitation and camping expedients.

4. Military Art.—Three hours a week during the second semester.

(a). Practical. Weight 10.

The same as Course 2(a); signaling; semaphore and flag; first-aid. Work with sand table by constructing to scale intrenchments, field works, obstacles, bridges, etc. Comparison of ground forms (constructed to scale) with terrain as represented on map; range practice.

(b). Theoretical. Weight 4.

Lectures, military history (recent); service of information and security (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping expedients); marches and camps (Field Service Regulations and Infantry Drill Regulations).

Third Year. Advanced Course.

5. Military Art.—Five hours a week during the first semester.

(a). Practical. Weight 13.

Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises laid down for the unit. Military sketching.

(b). Theoretical. Weight 11.

Minor tactics; field orders (studies in minor tactics, United States School of the Line); map maneuvers.

Weight 8.

Company administration, general principles (papers and returns). Weight 1.

Military History. Weight 2.

6. Military Art.—Five hours a week during the second semester.

(a). Practical. Weight 13.

Same as (a) Course 5. Military sketching.

(b). Theoretical. Weight 11.

Minor tactics (continued); map maneuvers. Weight 8.

Elements of international law. Weight 2. Property accountability; method of obtaining supplies and equipment (Army Regulations). Weight 1.

Fourth Year. Advanced Course.

7. Military Art.—Five hours a week during the first semester.

(a). Practical. Weight 13.

Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises scheduled for the unit. Military sketching.

(b). Theoretical. Weight 11.

Tactical problems, small forces, all arms combined, map maneuvers; court-martial proceedings. (Manual for Courts-martial).

International relations of America from discovery to present day; gradual growth of principles of international law embodied in American diplomacy, legislation, and treatise.

Lectures: Psychology of war and kindred subjects.

General principles of strategy only, planned to show the intimate relationship between the statesman and the soldier (not to exceed 5 lectures).

8. Military Art.—Five hours a week during the second semester.

(a). Practical Weight 13.

Same as Course 7(a).

(b). Theoretical. Weight II.

Tactical problems (continued); map maneuvers. Rifle in war.

Lectures on military history and policy.

No student electing one of these courses will be promoted to the next higher class in College or graduated from College unless he has completed the work of the course for the previous year to the satisfaction of the Professor of Military Science and Tactics.

The appointment of cadet officers and noncommissioned officers for the Corps are made from members of the Junior and Senior Classes in College and from members taking post-graduate courses, provided there is a sufficient number. It is the intention to give the student entering the advanced course the benefit of an opportunity of training in a responsible rather than in a subordinate position.

No military duties in addition to the training courses outlined are required from members of the Reserve Officers' Training Corps.

A student having completed these courses will on graduation from College be eligible for appointment to the Officers' Reserve Corps as a temporary second lieutenant of the regular army in times of peace for purposes of further instruction, for a period not exceeding six months, with all the allowances now provided by law for that grade, but with pay at the rate of \$100 per month.

For those who aspire to enter the ranks of regular army officers from civil life the Reserve Officers' Training Corps in our College offers unexcelled advantages and opportunities.

WHAT THE GOVERNMENT OFFERS TO MEMBERS OF THE R. O. T. C.

(Extract from information bulletin issued by the Committee on Education and Special Training, War Department, Feb. 1, 1919).

Each man will receive:

(actual cost value).

1 coat, wool, O. D.	\$ 9.79
1 breeches, wool, O. D.	6.32
1 shoes, russet or marching	4.65
1 shirt, wool, O. D.	3.50
1 overcoat, O. D., short	13.56
1 hat cord ....	.09
1 leggings, pair, canvas	1.05
1 hat, service	2.00
2 collar ornaments ....	.07

1 belt .....	.23
chevrons .....	.57

Per year\$41.83

Additional for those attending summer camps:

2 breeches, cotton, O. D.	\$ 3.38
1 shoes, russet or marching	4.65
1 shirt, wool, O. D.	3.50
1 leggings, pair, canvas	1.05
1 hat additional	2.00
1 hat cord .....	.09

Per year\$14.67

Each man will receive in four years, property valued at
4 X \$41.83\$167.32

Each man will receive in three summers property valued at
3 X \$14.07 42.21

Each man recommended will receive commutation of sub-
sistence, two years, or 590 days, at 40c. per day 236.00

Each man may receive commutation of subsistence in kind
(not paid in cash) three summers, 138 days, at 40c. per
day 54.00

Transportation average 1000 miles per summer, or 3000
miles for three summers, at 4c. 120.00

\$621.33

Average for each of the four years in college course\$155.33

Besides the items mentioned above, equipment issued for
each student amounts to at least\$ 50.00

The privilege of buying extra uniform at the above mentioned
prices from the Quartermaster Department, will have an addi-
tional saving value to those who take advantage of it.

MILITARY SERVICE CREDITS.

The College realizes the extent to which military service has affected the plans of young men of college age. It also appreciates the fact that the discipline of the army has had an educational value that is not inconsiderable. In view of these facts, aiming to encourage the men to complete their college education and at the same time maintaining the college standards, the College has decided that, in cases where the preliminary training meets our college entrance requirements, the men who were in the service may receive a credit of one and a half semester hour for each month of service. In no case shall this allowance exceed fifteen semester hours.

GENERAL INFORMATION.

The College aims to develop the greatest possible individuality and the highest manhood of the student. The prevailing influences are such as tend to lead young men to an active Christian life and to a full realization of their personal responsibilities. The immediate supervision of the students is in the hands of the President and Dean with the Class Advisers.

CLASS ADVISERS.

A professor is appointed as Adviser for each class. The members of the class should present any request to the Faculty thru their Class Adviser and confer with him on personal and college matters (see page 16 for list of Class Advisers).

STUDENT GROUP ADVISERS.

The professor at the head of each Department acts as the adviser of all the students having a major in his Department. He is known as the Group Adviser. He exercises oversight in the student's selection of electives and in the general character of his work. The Group Advisers are as follows: Group I, Professor Biklé; Group II, Professor Grimm; Group III, Professor Valentine; Group IV, Professors Breidenbaugh and Parsons; Group V, Professor Stahley; Group VI, Professor Ewing; Groups VII and VIII, Professor Clutz; Groups IX and X, Professor Rosenstengel.

STUDENT COUNCIL.

Without lessening its authority and responsibility, the Faculty has delegated certain duties in government to the student body as an exercise in self-government. The

students act through a Student Council consisting of four Seniors, three Juniors, two Sophomores, and one Freshman, elected by their respective classes. This Council acts in certain matters of discipline and in matters concerning the general welfare of the student body, and is one medium of communication between the students and the Faculty. Hazing in any form is forbidden. Any practice involving physical, personal injury and bodily harm or the performance of any humiliating action entailing surrender of dignity and self-respect under fear or threat of force, is regarded as hazing. To have or to drink intoxicating beverages or to frequent places where such beverages are dispensed is forbidden.

TERMS AND VACATIONS.

The college year of 35 weeks is divided into two semesters. The first semester begins at 11 A. M. on the third Wednesday in September and continues, with recesses at Thanksgiving and Christmas, to the end of January; the second semester begins when the first semester ends and continues, with an Easter recess, to Commencement Day, the second Wednesday of June. The closing days of each semester are devoted to examinations.

ATTENDANCE.

Every student is required to attend on week days a prayer service at 12 M., in Brua Chapel. On the Lord's Day attendance is required at services in the College Church. Those affiliated with other denominations than the Lutheran are, on request of their parents, granted permission to attend elsewhere. Ten per cent absences are allowed from chapel and church services each semester under rules governing absences from class work.*

*Demerits are imposed as follows: two for absence from prayer service, five for absence from church, and for misdemeanors according to the gravity of the offense. When a student receives twenty-five demerits he is notified by the Proctor and the parents are notified by the Faculty; when he receives fifty demerits he stands suspended.

Each student is allowed individually ten per cent absences from class room work in each course each semester. Fractions are not counted and absences may not exceed four in any course during a single semester.

A further allowance of absences may be granted to members of athletic teams and musical organizations, to participants in literary contests, and to representatives of societies for the purpose of attending conventions, but such extra allowance may in no case exceed five per cent.

Absences are reckoned from the first day of the first semester. Any absence on the two days preceding and the two days following any recess is counted as two absences.

If a student has further absences from the work of any instructor, the instructor may impose extra work or may exclude the student from the examination in the subject in which the absence has occurred.

Unexcused absences count as zero on grade.

Absences are not allowed for announced examinations. Such absences can be excused only by action of the Faculty, and the substitute examination will be held at such time as the instructor shall appoint.

Gymnasium work of two periods weekly thru the winter season, extending from Dec. 1 to Mar. 15, is required of the Freshman class, special cases for sufficient reasons excepted. Two absences are allowed for the season. Students taking military training are excused from gymnasium work. Credits are given for attendance and attention, and any shortage in credits due to absences or lack of interest must be made up later.

ELECTIVES.

A student having electives must deposit with the Registrar, within the first two days of the year, a written list of his electives, bearing the endorsement of the student's Group Adviser and of the instructors concerned. After the first week of the year changes in electives can be made

only when approved by the Faculty, under such conditions as may be determined in each case. No regular student may drop an elective subject without faculty permission; failure to secure such permission will be regarded as a deficiency in that subject.

EXAMINATIONS.

Examinations are held in all subjects at the close of each semester or when, during the term, a subject is completed. Instructors may hold topical or quiz examinations at the time of any of the regular appointments with the class. Absences from these examinations are governed by the rules given above.

CONDITIONS AND DEFICIENCIES.

Freshman entrance conditions must be satisfied by the beginning of the Sophomore year.

A student whose grade in any course is reported as deficient at the close of a semester must present himself for re-examination at the beginning of the next semester; failing in this examination he must repeat the semester's work in that course. The matter of re-examinations is governed by the following rules:

1. Re-examinations for those students whose grade, as reported to the Registrar at the close of the previous semester, is "E" or "incomplete," shall be held at such a time as the instructor shall appoint, not later than October 10 in the first semester and not later than March 1 in the second semester.

2. Re-examinations must be given by the instructor at such a time as not to conflict with any of the regular classwork of the student.

3. A student may be allowed, upon written permission of the instructor, approved by the group adviser, to defer the re-examination until the final examination at the end of the semester's work in the next succeeding class in the given subject.

4. If the student fails to pass the re-examination given under rules 1 or 3, he must repeat the semester's work in the given course.

5. Failure to report for the re-examination at the time appointed will count as a failure in the examination unless, owing to sickness or urgent necessity, the faculty allow another re-examination.

A student who at the beginning of any college year continues deficient in more than one third of a year's work will be enrolled with the class in which the deficiency occurs. The student will not be advanced in enrollment with his class until the deficiency has been removed.

A student deficient at the beginning of a year in courses aggregating twelve semester hours will be required to drop a corresponding number of semester hours in the regular work of the year.

RECORDS.

A record of scholarship and deportment, under the care of the Registrar, is kept for each student. The grades of scholarship are designated as follows: A (excellent), B (good), C (fair), D (poor, barely passed), E (failed, but entitled to another examination), F (failed utterly and must repeat with the next class), and Inc. (incomplete).

REPORT.

A report from the above record is sent to the parents or guardian of each student at the end of each semester. About the middle of each semester notice is given to the student and to his parents or guardian if his work is of low grade or if he has an excessive number of absences.

REQUIREMENTS FOR GRADUATION.

Every student completing the prescribed work of any group of studies as tabulated under Outline of Groups, p. 32-58; and an original English essay (see page 113), will receive the degree pertaining to that group, either Bachelor of Arts or Bachelor of Science; provided, however, that no regular student shall carry less than sixteen or more than twenty semester hours in any semester, unless by special permission of the Faculty.

No student will be graduated who is not present at Commencement, unless he be excused by the Faculty.

CERTIFICATES.

Partial and Special Course students, as well as those who withdraw before completion of a full course of study, are entitled to a certificate giving a copy of the college record.

MASTER'S DEGREE.

The degrees of Master of Arts and Master of Science are conferred on those having the Bachelor's degree from approved colleges, according to the following regulations:

1. The Master's degree is conferred upon graduate students on the completion of at least one year of resident work. Such students must present to the Faculty Committee on Advanced Degrees, for approval, a plan of advanced studies involving the equivalent of at least twenty-four semester hours. It is recommended that at least one-half of the course be devoted to some one subject.

2. The Master's degree is also conferred on non-resident graduates of this College. These must, however, at the beginning of their candidacy arrange with the Faculty Committee on Advanced Degrees (see page 17) a systematic course of study, and must report at stated

times to the head of the department in which the subjects have been chosen.

In either case the candidate must pass examinations satisfactory to his instructors and to the committee. Previous to the final examinations the instructors in charge shall file with the committee a statement of the work done by the candidate. If the report is satisfactory, the candidate will be permitted to present himself for final examination. He shall also be required to prepare an essay or thesis upon an approved subject bearing on his principal study. This essay or thesis must be completed and submitted to the committee at least one month prior to the Commencement at which the degree is to be conferred; if accepted, it becomes the property of the College.

Graduates of this College who have devoted at least one year to graduate work in residence at other colleges or universities and have fulfilled the above requirements may be admitted by the Faculty to the Master's degree. It may also be conferred upon college graduates who have completed courses of advanced study in professional schools, provided that the work done be in kind, grade, and amount equivalent to that required of other candidates for the same degree and that it has not been offered to satisfy the requirements for a professional degree.

HONORS.

The following honors will be awarded at the close of each year:

A. Final Honors will be awarded to members of the graduating class meeting the following conditions:

General Final Highest Honors will be awarded to those students who have maintained thruout their four years the grade of A in all of their studies.

General Final Honors will be awarded to those students who have maintained the grade A in at least half of

the work of their four college years and have not fallen below the grade B in their studies.

Students entering at the beginning of the Sophomore year will be awarded the same honors if for three years they meet the above requirements as to grade.

B. Department Final Honors. If the head of any department recommends a student taking a major in that department as having shown special excellence in that work, the student shall be awarded Final Honors in that department provided he does not have a grade below B in more than three courses in other departments.

C. Class Honors for Freshman, Sophomore, Junior, and Senior Years. Highest Honors for the designated year will be awarded to those members of these classes who have maintained the grade A in all of their studies thruout the year.

Class Honors for any particular year will be awarded to those members of the class who have maintained the grade A in at least half of the work of the year and do not have a grade below B in any of their studies for the year.

These awards are announced at Commencement and published in the next Catalog number of the BULLETIN.

PRIZES.

Muhlenberg Freshman Prize. The interest of a fund of five hundred dollars, contributed by F. A. Muhlenberg, D.D., LL.D., a former professor in this College, is given at the close of each year to that member of the Freshman Class who is found to have attained the highest grade of scholarship in Group I.

Baum Mathematical Prize. Charles Baum, M.D., Ph.D., Class of 1874, of Philadelphia, has contributed five hundred dollars, the income from which is to be given annually to that member of the Sophomore Class who shows the greatest proficiency in Mathematics.

Hassler Latin Prize. Mr. Charles W. Hassler furnished a fund, the interest of which is annually expended for the purchase of a Gold Medal, to be presented to that student of the Junior Class, who, at the end of the year, shall be rated as the best Latin scholar.

Graeff Prize. This prize was founded by Mr. John E. Graeff, Class of 1843. The interest on a fund of \$500 is awarded for the best English Essay from a member of the Senior Class, on a subject previously assigned. The decision is made by a committee appointed by the Professor of English.

In order to complete the requirements for graduation (see p. 110) each member of the Senior Class must write and submit, on or before May 1 of the Senior year, an original essay in English, in length not less than 1500 words nor more than 3,000. This essay may be submitted in competition for the Graeff Prize; provided that in such case the subject shall be the subject announced in that contest.

Prizes in Debate. The Literary Societies of the College provide three prizes of \$36, \$24, and \$15, respectively, for the encouragement of skill in debating. The first contest takes place about the middle of November between teams chosen by the Sophomore and Freshman Classes, respectively, and the winning team is rewarded with \$15. The second contest between the winning team and a team from the Junior Class, takes place about the middle of March, and the team that wins this contest receives \$24. The third contest between the second victors and a team from the Senior Class, takes place about the middle of May, and the winners of this contest receive \$36. Winners of the prize of \$36 are excluded from further competition.

Elinore Taylor Brewer Greek Prize. The Class of 1883 has contributed the sum of five hundred dollars, the income from which is annually awarded as a prize to that

member of the Sophomore Class who has done the best work in the regular Sophomore Greek Course.

Samuel Garver Latin Prize. The income from a fund of \$500 established by Rev. Austin S. Garver, A.M., a member of the Class of 1869, in memory of his father, Samuel Garver, is annually awarded to the student who has made the greatest progress in Latin during his Freshman year.

Samuel Garver Greek Prize. The income of a fund of \$500 established by Rev. Austin S. Garver, A.M., a member of the Class of 1869, in memory of his father, Samuel Garver, is annually awarded to the student who has made the greatest progress in Greek during his Freshman year.

No student shall be eligible to any honor or prize unless he has had at our own College all the work required of all students in all groups for the year or years for which the honor or prize is awarded; and (unless substitutions have been approved at the time by special Faculty action) he must have had also all the work required in his group for the year or years for which the honor or prize is awarded.

SCHOLARSHIPS AND AIDS FOR STUDENTS.

Endowed scholarships worth \$30 each, and a limited number of scholarships worth \$50 each, are awarded annually to deserving students by the Finance Committee of the Board of Trustees. All applications for these scholarships must be made in writing and must state in full the reasons for the request. Such applications must be handed to the President before October 1 of the college year.

An endowment fund of \$5,000 for the aid of worthy and needy students has been established by Mr. C. H. Boyer as a memorial to his father, Rev. Matthew G. Boyer, D.D., '65, for over eighteen years a most faithful and efficient member of the Board of Trustees of the Col-

lege. The income from this fund is divided into ten scholarships of \$25 each, awarded annually. Applications for this aid must be in writing addressed to Mr. C. H. Boyer, 29 La Salle St., Chicago, Ill., or to the President, before October 1 of the college year.

Rev. Sydney E. Bateman, M.D., Class of 1887, has established a scholarship fund of \$500, the income from which is awarded each year to a needy student preparing for the ministry. Applications for this scholarship must be handed to the President before October 1 of the college year.

The Parent Education Society of the General Synod controls ten scholarships, worth \$30 each, which are open to young men preparing for the ministry in the Lutheran Church. Applications for the use of these scholarships should be made to the Chairman of the Scholarship Committee, Rev. J. A. Singmaster, D.D., Gettysburg, Pa.

A scholarship of \$350 is granted annually to an advanced student who has shown special aptitude and excellence in the study of Chemistry. The money is paid thru the College by the Du Pont Powder Company in recognition of the splendid work done in the past by our former graduates employed by that concern.

A number of other \$30 scholarships have been endowed and are controlled by congregations, synods, and individuals. The Gettysburg School Board controls such a scholarship established by C. W. Thompson, Esq., of Lebanon, Pa. The authorizations from those controlling these scholarships must be handed to the President before October 1 of the college year.

A considerable number of students earn part of their college fees by caring for halls and class rooms and by doing other work about the campus and buildings. Twenty-five cents an hour is allowed for these services. All applicants for such employment must hand a written request for it to the President before October 1 of the college year.

Upperclassmen are employed as proctors and caretakers of the various college buildings and as assistants in the laboratories. One is employed to have charge of the Reading Room. These appointments are made by the Faculty; and applicants for such positions must be made in writing and must be in the hands of the President before May 1 of the preceding college year.

There are many opportunities in the town of Gettysburg for students to earn money. Rev. S. F. Snyder, Assistant to the President, will be glad to assist those who desire such outside employment. Many students skilled in the use of musical instruments earn money by playing at various functions in the town and in the College. Some of the students are granted allowances by the Athletic Council for work and supervision in the Gymnasium and on the Athletic Field. A number of students earn their board by managing student eating clubs, of which there is a large number, or by waiting on the table. Others earn money by acting as newspaper correspondents.

Any student wishing to engage in business or to undertake employment during term time is required to obtain permission from the President or Dean. Any violation of this rule is regarded as a misdemeanor.

The children of clergymen are allowed a reduction of one-half of the tuition.

TREASURER'S BILLS.

The bills of the College Treasurer are made out for each semester and include half of each item for the college year.

No student will be graduated until all financial obligations to the College and for class publications and other student interests are settled, except when a student has registered a timely protest with the Faculty and the claim for relief has been allowed. No credits for college work

done or statement of honorable dismissal will be certified to until these financial obligations have been paid.

COLLEGE FEES.

A Registration Fee of \$5 is required on entering College and is payable to the Registrar.

The annual charge for Tuition is \$125. The payment of this fee also admits the student free of charge to all college athletic games held in Gettysburg.

Special course students must pay \$10 tuition per course for each semester, but they are not required to pay the enrollment fee.

In any course pursued for a Master's degree the charge for Tuition is \$75, when all the instruction has been given by members of the College Faculty. Of this \$25 is considered as a Registration Fee and is payable in advance, the balance being due one month previous to the date set for the conferring of the degree. Laboratory charges are extra. When the Master's degree is taken *in absentia* the total fee is \$25 payable in advance. Students in the Theological Seminary at Gettysburg may become candidates for the Master's degree by paying the regular registration fee of \$25; they are exempt from the payment of tuition exclusive of possible laboratory fees.

ANNUAL LABORATORY FEES.

Based on three laboratory periods per week these are:

Biological Laboratory	\$14.00
Chemical Laboratory	18.00
Physical Laboratory	12.00
Mineralogy for the course	3.00
Botany for the course	4.00
Bacteriology for the course	5.00

In addition to the Chemical Laboratory Fee a charge is made for apparatus broken or not returned in good condition. In the Physical Laboratory an additional charge is made for material used and any damage done to apparatus.

ANNUAL ENGINEERING FEES.

Junior year	\$15.00
Senior year	15.00
Summer Course in Surveying	10.00

In addition to these engineering fees a charge is made for apparatus broken or not returned in good order. A charge is also made for engineering apparatus used by students who do not pay the annual engineering fees.

BOARDING.

The College does not maintain a dining hall. The students receive excellent board in clubs and with private families at a cost of from \$4.00 to \$5.00 per week.

ESTIMATED COST OF A YEAR IN COLLEGE.

The expenses of a college student depend largely on the training and habits of the individual. To aid the student rooming in a College dormitory to calculate the probable cost of a year in college at Gettysburg the following estimates are submitted:

(A). ITEMS ON COLLEGE BILL.

	Low.	Moderate.	Liberal.
Tuition	\$125.00	\$125.00	\$125.00
Room rent and heat (half room)	10.00	25.00	40.00
Electric light (half room) ..	3.15	3.15	6.30
Payable to Treasurer	\$138.15	\$153.15	\$171.30

(B). OTHER EXPENSES.

Board for 35 weeks	\$140.00	\$157.50	\$175.00
Laundry	15.00	18.00	20.00
Books and stationery	15.00	18.00	20.00

Est'd cost for college year ..	\$308.15	\$346.65	\$386.30
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To the above should be added laboratory or engineering fees in case the student takes courses involving such charges.

COLLEGE DORMITORY ROOMS.

The following rules govern the assignment of dormitory rooms in Pennsylvania Hall, Cottage Hall, McKnight Hall, and Thaddeus Stevens Hall.

Non-resident students are required to room in the college dormitories unless excused by the Committee on Dormitory Rooms. A non-resident student rooming outside of the dormitories will be charged \$7.50 each semester for this privilege unless there are no dormitory accommodations available or for special reasons this charge is remitted by the Faculty. No more than two students will be allowed to room in a fraternity house.

No reservations of room beyond the actual needs of the students are permitted. No student is allowed to change his room or to take in a roommate without permission from the Committee on Dormitory Rooms and if allowed a new rental contract must be signed.

RESERVATIONS OF ROOMS BY MEMBERS OF THE STUDENT BODY.

All rooms are declared vacant May 1 of each year. On this date the reservation of rooms for the next college year begins. Students desiring to remain in the rooms that they have been occupying have that right provided they make application and sign the rental contract at the Registrar's office before May 8. After this date all rooms not reserved in this manner are open for assignment, on the days announced by the Registrar, to the members of the several classes in the following order: Juniors, Sophomores, Freshmen. Within the respective classes the order of choice and assignment is determined by lot conducted by the Registrar.

RESERVATION OF ROOMS BY NEW STUDENTS.

Rooms not reserved before May 15 will be available for assignment, in order of the applications, to new stu-

dents desiring to enter College the following September. The Registrar will reserve rooms for such students by correspondence if he is informed, at least approximately, of the kind of accommodations desired and whether or not a roommate is wanted. A deposit of five dollars with the Registrar is required from every new student reserving a room, which deposit will be deducted from his first semester bill. The rental contract involved may be signed at any time before the opening of College. Applications for such reservations should be made as early as possible both for the purpose of securing a satisfactory room and to relieve the rush at the opening in September.

ASSIGNMENT OF ROOMS IN THE ATHLETIC FIELD HOUSE.

The assignment of rooms in the Athletic Field House is made by the Athletic Council. Applications for these rooms must be made in writing and sent to Mr. S. F. Snyder, Graduate Athletic Manager, Gettysburg, Pa., not later than May 7. Assignments to the new students entering in September will be made later in the order of the applications.

DORMITORY ROOM FURNITURE.

All rooms are furnished by the occupants. Students graduating from College or changing from one room to another usually sell their furniture to the new occupants at a fair price mutually agreed upon. This plan is regarded highly desirable by the college authorities. The Finance Committee of the Board of Trustees has engaged a competent appraiser who has no direct interest in connection with the College to determine the value of the furniture in any room when asked to do so. When students are unable to agree on the price for the furniture in a room, this appraiser will serve as an expert to ad-

just the matter. Any failure to make an adjustment on the basis of the findings of the appraiser must be referred to the Committee on Dormitory Rooms for final action.

ROOM RENT.

The charge for room rent, including steam heat, is given below for each room in the above-mentioned dormitories, and covers the period commencing the Saturday before College opens in September and ending the Saturday after College closes in June, with the exception of the Christmas vacation. The occupants of a room pay equal parts of the rental. Not more than two students are allowed to occupy one room or suite except in the case of some of the larger suites. In Pennsylvania Hall the designations are E for east division, M for middle division, and W for west division. McK indicates McKnight Hall; C, Cottage Hall; T, Thaddeus Stevens Hall; F, Athletic Field House.

\$18.00: 255, 256, C.

\$20.00: 106, 108, W; 120, 122, E; 357, 358, 360, C.

\$22.00: 105, 107, W; 119, 121, 123, E.

\$25.00: 353, 354, 362, C; 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, T.

\$26.50: 103, W; 125, E.

\$27.50: 101, W; 127, E.

\$30.00: 340, McK; 270, F.

\$35.00: 111, 117, 118, M; 140, McK; 361-363, C.

\$37.50: 104, W.

\$42.00: 206, 208, 306, 308, 406, 408, W; 210, 410, M; 220, 222, 224, 320, 322, 324, 420, 422, 424, E.

\$44.00: 205, 207, 305, 307, 405, 407, W; 219, 221, 223, 319, 321, 323, 419, 421, 423, E; 333, 334, 335, 336, 343, 344, 345, 346, McK.

\$45.00: 153, 359, C; 38, 39, 40, 41, 43, 44, 45, 46, T.

\$48.00: 240, McK.

\$49.50: 337, 338, 341, 342, McK; 173, F.

\$55.00: 204, 304, 404, W; 211, 217, M; 226, 326, 426, E; 331, 332, 347, 348, McK.

\$57.00: 202, 203, 302, 303, 402, 403, W; 225, 228, 325, 328, 425, 428, E.

\$60.00: 201, 301, 401, W; 227, 327, 427, E; 157, 158, C; 273, 274, F; 16, 42, T.

\$62.00: 257, 258, C.

\$65.00: 154, C.

\$70.00: 159, 160, 259, 260, C; 271, 272, F.

\$77.00: 212, 218, 312, 318, 412, 418, M.

\$80.00: 161, 162, C; 170, 171, F.

\$82.50: 133, 134, 137, 138, 141, 142, 145, 146, McK.

\$85.00: 251-253, 252-254, C.

\$88.00: 411, 417, M; (suites of two rooms).

\$95.00: 242 and 244, McK; 241 and 243, McK; 235 and 237, McK; 236 and 238, McK; (suites of two rooms).

\$100.00: 261-263, 262-264, C.

\$140.00: 233, 245, McK; (suites of three rooms).

Rooms 111, 117, 118, 212, 218, 312, 318, 411, 412, 417, 418, M, include a large study and a good-sized bedroom. Odd numbers are on the south side of the building in Pennsylvania Hall and on the west side of the building in McKnight Hall.

The cost of electric light, eighteen cents per week for each 40-watt Tungsten lamp or its equivalent, is charged on the regular College bills. Any damage done to a room will be charged up against the occupants. Only the Superintendent of Buildings and Grounds is allowed to change the locks on doors. The rooms must at all times be accessible to the college authorities. The occupants of a room will be held personally responsible for the order maintained in that room. Students disregarding Faculty or Student Council Dormitory Regulations will forfeit their rights as occupants. A janitress is employed by the College to clean thoroly and set to rights

every student room in the dormitories periodically; this service is without cost to the students. The Registrar will be glad to furnish any additional information that may be desired about dormitory rooms as well as rooms in the homes of families living in the town.

STUDENT PROPERTY.

The College disclaims all responsibility for the care or safety of any property belonging to students. With the exception of furniture, mattresses, tacked-down carpets and window shades, any student property left in a dormitory room during the summer vacation must be securely packed in barrels or boxes distinctly marked with the owner's name and the number of his room. No property should be left in closets or bureau drawers. This is to insure against possible loss and to facilitate the cleaning of the rooms.

MATERIAL EQUIPMENT.

LIBRARIES.

The College Library contains about 24,000 volumes, besides numerous unbound pamphlets. It is a regular depository of the United States Government and the Government of the State of Pennsylvania. Several hundred volumes of public documents are annually received from these sources.

The Library is available to all students under established regulations. During term time it is open for consultation and the drawing of books eight hours each week day, except on Saturday, when it is open for four hours. The librarian and his assistants are always ready to aid the students. The opportunities for the use of the Library are continually being increased by means of a systematic organization and the building up of a complete and attractive library of reference.

In the same hall with the College Library are the Libraries of the two Literary Societies. They comprise a large number of well-selected and standard volumes, which are annually increased thru the income of separate funds. The Philomathean Library contains at present 7,200 volumes; the Phrenakosmian Library over 7,850 volumes. These libraries are accessible to the members of the societies under their respective regulations, and are open for the issue of books on Wednesday at 4 P. M., and Saturday at 11 A. M., during term time.

READING ROOM.

The Reading Room is well supplied with daily and weekly papers and leading literary and scientific periodi-

cals, thus enabling the student to become acquainted with current events and contemporary, scientific, literary, and other cultural movements.

LABORATORIES.

The Biological Laboratories on the second floor of Glatfelter Hall consist of two large, well-lighted, communicating rooms. They are supplied with twenty-five fine microscopes, and all the other appliances necessary in carrying on the work of the course outlined in the Department of Biology.

The Chemical Laboratories in the Chemical Laboratory Building, as described on page 130, are amply equipped with all the conveniences and apparatus and supplies that are desirable in the requirements for general and analytical chemistry, including work in organic preparations, proximate analysis, examination of water, and other special subjects.

The Physical Laboratory. The lecture room is provided with a large table with sink, water, gas, and electrical connections; apparatus supports, blackboard, charts, and black curtains and a hand-painted screen for stereopticon work. The laboratories, comprising six rooms for general work, besides photographic dark rooms, store room, and storage battery room, and the lecture apparatus room are equipped with modern and carefully selected apparatus for both elementary and advanced work. Alternating and direct electric current is supplied at different points by means of a central switch board, a motor generator, and a storage battery. The apparatus includes a Geryk double cylinder oil immersion air pump, high grade balances, spectrometers, photometer, and stereopticon; and in electricity, D'Arsonval galvanometers, Wheatstone bridges, potentiometer, voltmeters, standards of resistance, capacity, electro-motive force, and self-induction, ammeters and voltmeters for

direct and alternating currents (all of the best make) ; a complete dynamo and motor set illustrating different styles of direct and alternating current machines (induction, synchronous, three-phase, etc.) ; an induction coil giving an 8-inch spark, high frequency coils, electric wave apparatus, and telegraph, telephone, and wireless telegraph outfits, and Kathode ray and X-ray tubes.

ENGINEERING EQUIPMENT.

The equipment in the Engineering Departments is modern and adequate and is being augmented as necessity demands.

Instruction in mechanical drawing is given in a large, well-lighted room in Glatfelter Hall. The department is well equipped for the purpose and is supplied with drawings illustrating the best recent practice.

The surveying equipment is adequate for the purposes of practice in all kinds of surveying. It includes, besides a number of transits and levels, a plane table, traverse board, sextant, planimeter, level and stadia rods, tapes, etc.

The facilities for materials testing include a 100,000 pound Riehle universal testing machine, with the necessary measuring instruments for the determination of the physical properties of steel, cast iron, wrought iron, timber, concrete, etc. There is also a cement laboratory, with a Riehle tensile briquette machine of 1,000 pounds capacity, and a variety of other apparatus for making all the standard physical tests of cement, sand, and mortar.

The pattern shop, located in a commodious room in the basement of Glatfelter Hall, is supplied with speed lathes and an oilstone grinder, also numerous benches and hand tools, all of the most modern type. In addition there has been provided foundry equipment of an elementary nature for illustrating the fundamental principles of moulding. The College has installed a medium-sized engine

lathe, a drill press, emery wheels, and numerous vises and bench tools. A portable forge with the usual collection of small tools has been added.

Thru the courtesy of manufacturers in the vicinity of Gettysburg, arrangements have been made whereby students may spend a short time as apprentices in well-equipped machine shops. By such co-operation it is hoped that the students' knowledge of manufacturing processes will be increased to a greater extent than would be possible in a course of shopwork conducted entirely in a college laboratory.

The foundation of an electrical engineering laboratory has been laid. There are facilities for work in both direct and alternating current phenomena. The apparatus includes several direct current motors and generators, a rotary converter, a synchronous motor, several polyphase and single phase induction motors, a number of transformers, and an assortment of direct and alternating current measuring instruments.

In connection with the College heating and pumping plant there is available for commercial testing such equipment as boilers, a gas engine, and two pumps. As necessity demands further apparatus will be added.

MUSEUM.

The Museum contains varied collections of fauna and flora and minerals, all of which are freely used in instruction. The Mineralogical Cabinet contains over 6,000 specimens, including not only very full suites of the more common and more important minerals, but also good specimens of many of the rarer minerals. The collection in Lithology numbering 3,000 specimens, and of iron in Metallurgy, have, by recent additions, become fairly representative in the most important departments of these sciences. The Botanical collection of 6,000 specimens, mainly presented by Miss Elizabeth C. Morris, of Ger-

mantown, Pa., is well arranged and contains a full representation of American Flora. A beginning has been made of a Chemical Museum—to contain specimens of raw and manufactured materials in chemical industries. Friends of our institution can greatly aid us by making additions to these collections.

BUILDINGS.

Pennsylvania Hall, erected in 1836-38, was remodeled and improved in 1889. It contains eighty-six rooms for students, many of them *en suite*, so that those who may wish to do so can have separate study and sleeping rooms. In this building are also the reading room of the Literary Societies and the auditorium used by the College Y. M. C. A. The rooms are all heated by steam and lighted by electricity. Sinks with running water are located on every floor, and on the first, second, and third floors are complete lavatories with hot and cold water connected with the College system of water-works.

McKnight Hall, erected in 1897, is a dormitory building of three stories accommodating about fifty students. It is named in honor of Harvey W. McKnight, D.D., LL.D., Class of 1865, Fourth President of the College. It is finished entirely in hard wood, is heated by steam, lighted by electricity, has hot and cold water on each floor, and lavatories in convenient places. The first floor has eight rooms, each with open fire place, tile hearth, and spacious closets. These rooms may be used by one or two occupants, as preferred. On the second floor all rooms are *en suite*, each suite consisting of a study with one bedroom or two. These are also provided with hearths, closets, etc. The third floor is divided into sixteen single rooms.

Cottage Hall was built in 1856 as a double house for professors. In 1914, because of the great need for more dormitory accommodations due to the increase in the

number of students, it was transformed into a College dormitory of thirty rooms. As it is very advantageously situated on the campus near the main gateway, and is fitted up with all modern conveniences, rooms in this building are among the most desirable to be had.

Glatfelter Hall, erected in 1888-89, is used for general college purposes. It is named in honor of the late P. H. Glatfelter, of Spring Grove, Pa., a former trustee, who with his family has contributed largely to the College. On the first floor are the library and reference rooms, the Registrar's office, and recitation rooms. The second floor contains five recitation rooms, the biological laboratories, a drafting room, and a large Social Hall. A large museum and four recitation rooms are on the third floor. In the north wing of the third floor is the hall of the Philomathean Literary Society; in the south wing the hall of the Phrenakosmian Literary Society. In the basement are the laboratories of the Department of Physics with the recitation rooms directly above. The newly-equipped Engineering Laboratory and Shops occupy the entire north wing of the basement.

Thaddeus Stevens Hall, erected 1867-68, is a three-story brick building fronting on Carlisle street. It is heated by steam and lighted by electricity, and supplied with pure artesian water, hot and cold. On the first floor are class rooms, offices, and a toilet room. The second and third floors are used exclusively as a dormitory for students. On the second floor the rooms are separate, and a modern toilet and shower bath room has been provided. On the third floor they are arranged *en suite* with a broad archway separating the study and sleeping apartments.

The Athletic Field House is situated on the north-east corner of the Athletic Field. This is a dormitory designed especially for the use of the members of the College athletic teams and contains all the needed accommodations in the way of showers, hot and cold water, and so

forth. The building is heated by steam and lighted by electricity.

The Brua Memorial Chapel, erected in 1889-90, is the gift of the late Col. John P. Brua, U. S. A., as a memorial to his parents. This building is used for daily prayers, for Commencement exercises, lectures and other occasions requiring a large audience room.

The Chemical Laboratory is a frame building, erected in 1872 and in 1890 converted to its present use. It contains on one floor a large lecture room, an office, store-rooms, chemical-room, balance-room, and three laboratories—providing for two hundred and sixty persons working individually. The building is fitted with the most approved appliances; gas and water at each desk; there are ample hoods, a water-distilling apparatus and large sand bath, and other necessary apparatus. The balance-room contains balances set on pillars especially built for the purpose. In the basement and in the attic are store-rooms. On account of the recent large increase in the number of students an addition to the Chemical Laboratory was built in 1916.

The Astronomical Observatory, erected in 1875, is furnished with an achromatic telescope having an object glass of six and one-half inches, with a transit instrument, chronometer, and other astronomical appliances.

The Gymnasium has on the first floor ample dressing rooms and bathing facilities, and a baseball cage. On the second, or main floor, a class of sixty members can be accommodated for gymnastic drill. This floor is partly enclosed for basketball purposes. The selection of specialized apparatus in light and heavy gymnastics is varied and complete. The office, where all physical tests and measurements are taken, is also on this floor, and is furnished with a full set of anthropometric apparatus. The gallery has a good seating capacity for spectators.

The Gymnasium is open every week day from 10 A. M. to 10 P. M., and the time is apportioned between regular class practice, general practice, and games.

The Boiler House supplies the steam required for heating all the College buildings.

Besides these buildings there are on the campus the President's house, four halls erected by Greek Letter Societies, and a house for janitors.

A professor's house, donated by Professor George D. Stahley, M.D., class of 1871, has been erected on College ground, corner of Carlisle and Stevens Streets.

Nixon Athletic Field. Immediately north of the College buildings is the athletic field, which is carefully graded and securely inclosed and covers an area of over seven acres. It affords room and facilities for all kinds of out-door sports. To the west of the field more than a dozen tennis courts have been laid out for the use of the students.

CLASS MEMORIALS.

As testimonials of their love for their Alma Mater and substantial tokens of gratitude for what she has done for them, the classes indicated below have donated memorials to her as follows:

Class of 1883. On the thirtieth anniversary of their graduation the members of this class donated \$500 to the College, the income from which is awarded annually, under the name of the Elinore Taylor Brewer Greek Prize, to that Sophomore who does the best work in the regular Greek class.

Class of 1893. On the twentieth anniversary of their graduation the members of this class presented the fine memorial gateway at the main entrance of the College campus. The approximate cost of this imposing and artistic structure was \$1500.

Class of 1899. On the fifteenth anniversary of their graduation the members of this class presented the furnishings of the class-room for the Department of Philosophy and Education and a departmental library for that department. This equipment, costing nearly \$600, was presented as a Class Memorial to their class-mate, the Rev. Jacob Hiram Straw, who died on the African mission field.

Class of 1902. This class presented the College a concrete walk extending from the entrance into McKnight Hall to the driveway in front.

Class of 1906. This class gave a concrete walk that runs across the entire front of Pennsylvania Hall connecting the various entrances.

Class of 1907. This class paid for the wiring of all the halls and rooms of Pennsylvania Hall for electric light.

Class of 1912. This class erected the handsome light post in the center of the campus, with its cluster of five large electric light globes, and put down a concrete walk extending from this central point to Pennsylvania Hall, much of the actual labor being done by the members of the class.

Class of 1913. The gift of this class was a concrete walk which extends from Pennsylvania Hall to Glatfelter Hall connecting with the Gymnasium, and widening into a plaza in front of the entrance to Glatfelter Hall, with two handsome electric lamp posts on the two outer corners of the plaza. This class also put down part of the concrete walk in front of Thaddeus Stevens Hall.

Class of 1914. This class gave a concrete walk which reaches from the main gateway to the center campus light, together with three walks extending to Brua Chapel.

Classes of 1916 and 1917. These two classes presented a concrete walk reaching from Thaddeus Stevens Hall to the corner of Carlisle and Stevens Streets. All labor of putting down this walk was done by the members of these classes.

STUDENTS' INTERESTS.

LITERARY SOCIETIES.

Two literary societies are connected with the College, the Philomathean and the Phrenakosmian. These exert a remarkably favorable influence on the intellectual and social culture of their members. The exercises consist of essays, orations, debates, and music. The acquaintance with parliamentary law and the practice in clear thought and effective speech which are here gained, make these societies excellent schools in good citizenship. Each society has a spacious hall on the third story of Glatfelter Hall, conveniently and handsomely furnished. Their sessions are held every Friday evening. Every student should become an active member in one of these societies.

DEBATES AND ORATORICAL CONTESTS.

During the year there are debates between teams representing the different classes, also between teams of the literary societies. The College is also represented in the Intercollegiate Oratorical Union, being associated with Franklin and Marshall, Ursinus, Muhlenburg, and Swarthmore in an annual oratorical contest.

Y. M. C. A.

The Young Men's Christian Association of the College, the second one organized in the world, is an active agent in promoting religious interests among the students. Each Sunday morning and Thursday evening a public meeting is held, addressed by invited guests or students. Various Bible and Mission Study classes are organized

in college classes, fraternities, and other special groups. A salaried Y. M. C. A. Student Secretary has general direction and co-operates with the officers and committees of the association. The Woman's League of Pennsylvania College have begun a campaign for the securing of \$30,000 towards the erection of a College Y. M. C. A. Hall to serve as a religious and social center for the student body.

LECTURES.

A series of free public lectures is delivered each year by members of the Faculty and others prominent in some field of general interest.

The Y. M. C. A. conducts at very reasonable cost a series of interesting lectures and musical entertainments. Occasional lectures or addresses by prominent men are delivered before the student body.

MUSICAL ORGANIZATIONS.

Active and well trained choral and instrumental musical organizations consisting of a band, an orchestra, a guitar and mandolin club, and a glee club, add to the pleasure of their members and of the audience at their public exhibitions. These clubs usually take a ten days' trip during the winter.

ATHLETICS.

The various college athletic sports, football, baseball, basketball, field sports and tennis, are well organized. They are recognized as an important part of college life and receive encouragement, but under such regulations as it is believed will prevent them from becoming a possible source of demoralization to the student body and from

interfering with the primary work of the institution. The plan under which these sports are conducted gives the opportunity and encourages every student to take part regularly in some out-door exercise.

Students are permitted to participate in any or all branches of athletics unless parents or guardians have notified the Faculty to the contrary.

PRESS CLUB.

The chief aim of the Press Club is to bring the various interests of the College before the public thru the daily papers.

PUBLICATIONS.

THE PENNSYLVANIA COLLEGE BULLETIN is published by the Faculty four times during the year.

"The Gettysburgian," under the control of the student body, is published weekly, and makes a specialty of College and alumni news. A room in McKnight Hall has been provided as an office for the editorial staff of the "Gettysburgian."

"The Y. M. C. A. Hand-Book," issued at the opening of each college year, gives valuable information and suggestions to incoming students.

"The Spectrum," an annual publication by the Junior Class, contains pictorial representations of the College with its various organizations and surroundings, and useful information about students and alumni.

All the periodicals aim at enlarging the means of communication between the College and its graduates, former students and friends. These enterprises are cordially commended to the patronage of those interested in the welfare of the institution.

STUDENT COLLEGE REPRESENTATIVES.

A Student entering Pennsylvania College of Gettysburg from another college is required to be registered as a student here for a period of one calendar year before he is permitted to take part in intercollegiate athletics.

Any student whose work, reckoned from the beginning of the semester, is reported to the Faculty at any time during the semester as being below Grade D in two or more courses, will be debarred (as long as this condition exists) from representing the College in any student organization.

ADDRESSES OF ALUMNI.

The College is anxious to keep in touch with its alumni and ex-students not graduates, and requests that all changes in address be sent to the Registrar.


TEACHERS.

The attention of school boards, and others desiring teachers is called to the fact that it is frequently in the power of the Faculty to recommend suitable candidates. Many graduates successfully fill important positions in public and private institutions. The College course for teachers is arranged to meet the requirements of the School Code of Pennsylvania, thus securing the State Life Certificate for the graduates of the College. See page 74.

FORM OF BEQUEST.

I give, bequeath, and devise to "The Trustees of Pennsylvania College, of Gettysburg, in the County of Adams," in the State of Pennsylvania, and their successors and assigns forever, the sum of ——— (or shares in the bank

of ———, or any other personal property or real estate, as the case may be), to be applied to the Endowment Fund of the Institution.

 A bequest to a benevolent corporation, to be legal, must be made, in Pennsylvania at least thirty days, and in New York at least sixty days, before the death of the Testator; and should be signed by two witnesses not officially related to the College.

ALUMNI ASSOCIATIONS.

The Alumni Association of Pennsylvania College holds its regular annual meeting Wednesday afternoon of Commencement Week. In 1876 the Board of Trustees granted the Association the privilege of nominating six of their number to membership in the Board, and of maintaining this number as vacancies occur.

The officers of the association are:

President:

HON. DONALD P. MCPHERSON, '89..Gettysburg, Pa.

Vice Presidents:

PROF. CHARLES H. HUBER, '92.....Gettysburg, Pa.

CHARLES J. FITE, '98.....Pittsburgh, Pa.

HIRAM H. KELLER, ESQ., '01.....Doylestown, Pa.

Secretary:

CLYLE B. STOVER, '94.....Gettysburg, Pa.

Treasurer:

EDGAR A. CROUSE, '03Gettysburg, Pa.

The various district alumni associations are active and potential factors in promoting the interests of the College and bringing the College to the notice of prospective students.

GETTYSBURG ACADEMY.

This is a boarding school offering a four year course for students preparing for college and also a general or academic course for students who do not expect to enter college. As a training school for boys Gettysburg Academy seeks to cultivate habits of neatness and punctuality as well as industry and accuracy in study. It attaches the greatest importance to the culture of the heart and to the development of those manly virtues that make the truly Christian gentleman. The location, equipment, environment and ideals of the school are favorable for such training.

HOME LIFE.

It is the purpose of those in charge to give every student a happy, healthful home life. The Masters live in the school with the boys and are intimately associated with them both in their work and in their play. The large Living Room with its cheerful fire-place and comfortable furnishings is the gathering place of the boys when not on duty. Here is cultivated the "family spirit" of the school.

THE MAIN BUILDING.

A fine new structure known as The Main Building is now completed and occupied. This building is of beautiful, Colonial architecture and fronts one hundred and fifty-six feet on Carlisle Street. Into its construction and equipment have gone the very best and latest ideas that science, sanitation and school experience can give. The building is heated by a vacuum steam system from

the central plant and lighted thruout by electricity. The plumbing is of the most approved sanitary design.

The first floor contains large, airy class-rooms, lavatory with hot and cold water supply, shower baths and a locker-room. There are also a number of rooms for students.

The second or main floor contains the large Living Room beautifully finished in Colonial style with an ample fire-place, tiled floor and comfortable furnishings. This provides a useful and delightful center for the school life. To the south of this is the large Chapel and Study Hall. Here are held the religious exercises, the literary society meetings and certain study periods. To the north is the Dining Hall with a capacity of one hundred boarders. Here the Masters and students take their meals together. On this floor is also the modern sanitary Kitchen equipped with the best devices and machinery for the preparation of food. The table is abundantly furnished with wholesome, well-cooked food fresh from the rich farming and fruit country of the vicinity. Only pasteurized milk and cream is served; only pure filtered water and manufactured ice is used. The excellence and cheapness of food supplies in Adams County make it possible to furnish a very good table at very low rates. Near the Living Room are the office of the Headmaster, the study-hall for girls who attend as day students, and a cozy reading room. The reading room is supplied with a large number of magazines and papers and is open every day for the use of the students.

The entire third floor contains rooms for the students and Masters. There are single and double rooms. On this floor there is another lavatory with hot and cold showers, drinking-font, and all modern toilet conveniences.

ADMISSION TO COLLEGES.

Gettysburg Academy is an accredited secondary school. All colleges admitting students by certificate accept its scholarship credits for entrance. This means that a student satisfactorily finishing a course at Gettysburg Academy will be admitted without examination to Pennsylvania College at Gettysburg or to any other first grade institution admitting by certificate.

COURSES OF STUDY.

There are two courses, the Classical (with Greek), and the Scientific or Academic (with French or German); for detailed description of these courses see the special Academy catalog.

STUDENT OUTFIT.

All the boys except day students from the local community are required to room and board in the school. Each student will need the following outfit: Bible, four sheets, three pillow-cases, pillow, blankets, spread, towels, bath-robe, napkins, napkin-ring, fountain pen, and laundry bag (marked G. A.) All articles to be sent to the laundry should be plainly marked with the student's name.

The rooms are furnished with single beds, springs, felt mattresses, study table, chairs, book-case, chiffonier and window shades. A large closet is provided for each occupant. The only furnishings to be supplied by the student are a rug (9 x 12) for the floor and an electric desk lamp with cord.

SCHOLARSHIPS AND AID FOR STUDENTS.

A limited number of service scholarships worth \$30 each are awarded annually to deserving students by the Finance Committee of the Board of Trustees. Applications for these scholarships must be made in writing and should state in full the reasons for the request. Such applications must be handed to the Headmaster before October 1 of the school year. The children of clergymen are allowed a reduction of one-half of the tuition, that is, \$37.50 each school year.

The Parent Education Society of the General Synod controls ten scholarships worth \$30 each annually which are open to young men preparing for the ministry in the Lutheran Church. Application for the use of these scholarships should be made to President John A. Singmaster, D.D., Gettysburg Theological Seminary, Gettysburg, Pa.

Rev. Sidney E. Bateman, M.D., Sc.D., Class of '87, of Philadelphia, Pa., has established an endowment fund of \$500, the income from which is awarded annually as a scholarship to some worthy and needy student preparing for the ministry in the Lutheran Church. Application for the use of this scholarship should be made to the Headmaster of the Academy.

EXPENSES.

The rate for boarding students for the full school year is \$320 or \$340 or \$360 according to the size and location of the room selected. The school year is divided into two equal semesters as follows:

	Lowest Rate	Minimum Rate	Highest Rate
First Semester	\$160	\$170	\$180
Second Semester	160	170	180
Total	<hr/> \$320	<hr/> \$340	<hr/> \$360

The amount of each semester bill is payable in advance at the beginning of the semester. As a matter of accommodation, however, payment for one-half of a semester bill will be accepted at the beginning of the semester, in which case the balance must be paid not later than the middle of that semester.

These charges cover tuition, board, furnished room, heat, electric light, pew rent, use of athletic field and tennis courts, gymnasium, library, reading room and athletic fees. The money received from the athletic fees (calculated at \$6 for each student) is administered by a committee composed of faculty and student members for the benefit of the athletic interests of the school. There are no *extra fees*. It will therefore be seen that the cost of a course in Gettysburg Academy is much less than in the great majority of secondary boarding schools offering the same first-class advantages of instruction and equipment.

Each student upon reserving a room is required to deposit \$5 which will be credited on his first semester bill. He must also deposit \$1 to insure return of keys and care of the school property. Students responsible for damage to the school or student property are expected to report the same to the Headmaster who will make an equitable adjustment. Damage not so reported will be charged to the occupants of a room or in certain cases to the whole student body as circumstances may justify.

The tuition for day students is \$75 per school year including the athletic fee. The terms for payment are the same as for the boarding pupils.

The Academy catalog containing cuts of the buildings and detailed information will be mailed upon request to

THE HEADMASTER OF GETTYSBURG ACADEMY,
Gettysburg, Pa.

STUDENTS IN COLLEGE 1918-1919.

GRADUATE STUDENTS.

Non-resident.

Hashinger, William Roy	Coatesville
Keckler, Grover Patterson	Altoona
Nye, Levi Benjamin	Harrisburg
Rosenberry, B. F. L.	Easton

Resident.

Barbehenn, John Berthold	Jersey City, N. J.
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SENIOR CLASS.

Class of 1919.

Candidates for the Degree of Bachelor of Arts.

r Registered after Dec. 16 and therefore not in attendance during the S. A. T. C period (Sept. 26-Dec. 16) s Inducted into the Students Army Training Corps.
P. Indicates Pennsylvania Hall; M. McKnight Hall; C Cottage Hall; F. Field House.

Group

r Apple, John Adam	2 Sunbury	138 M
Baker, Ralph Wolf	1 Clearfield Theological Seminary	
Bortner, Minnie May ✓	2 Glenville 218 N. Stratton St.	
Clouser, Paul Russell	1 Harrisburg Theological Seminary	
s Drawbaugh, Herman Zinn	3 Camden, Ind.	133 M
s Faust, Martin Luther	2 Ambler	417 P
Grove, Elwood Martin	1 Red Lion Theological Seminary	
Hagedorn, Ivan Henry Carl	1 Philadelphia Theological Seminary	
r Hankey, Ralph Lee	2 York	206 P
Hilner, Howard Kauffman	1 Harrisburg Theological Seminary	
Huffer, Ralph Singleton	1 Burkittsville, Md. Theo. Seminary	
s Kopp, Curvin Franklin	2 York	418 P
s Lybarger, Donald Fisher	3 Harrisburg	121 P
Miller, Harman Frederick	1 Baltimore, Md.	205 P
s Miller, John Bringham	2 Spring Grove	259 M
Miller, Robert Sheridan	1 Johnstown Theological Seminary	
Mock, Ruth Olinger ✓	2 Gettysburg 34 W. Middle St.	
Redcay, William Harold	1 Hanover Theological Seminary	
r Schmidt, Frederick John	2 Philadelphia	360-362 M
s Shindler, Raymond Clayton	1 York	260 C
s Sieber, William Thomas	1 McAlisterville	418 P
Stine, Ralph Edward	1 York	408 P
s Stock, Earl Kresge	3 Wyoming	256 C
Stricker, William J. B.	3 Robesonia	341 M
r Stonesifer, Wade Earl	1 Emmitsburg, Md. Theo. Seminary	
s Yund, Roy La Verne	1 New Kensington	207 P

Candidates for the Degree of Bachelor of Science.

r Blocher, David	6	Gettysburg	28	W. Middle St.
r Brenneman, James Alexander	6	Freeport	242-244	M
s Christ, Bruce Levi	4	Pine Grove	211	P
s Dippel, Harry Weber	4	Jersey City, N. J.	142	M
r Gilliland, Samuel Alexander	4	Gettysburg	239	Carlisle St.
r Harbaugh, Wilfred LeCron	4	Waynesboro	360-362	C
s Hartley, Mahlon Artman	10	Gettysburg	321	P
s McDonnell, Carroll Richter	7	Gettysburg	321	P
s Miller, George Reich	4	Harrisburg	245	M
Oyler, Ralph Ziegler	4	Gettysburg	218	York St.
s Plank, John Earl	7	Gettysburg	403	P
Potter, Alexander Oberlander	6	Kitchener, Canada		
s Reinecker, Haydn Plank	4	Gettysburg	359	York St.
Rea, Alice Martin	4	York		W. Stevens St.
Stallsmith, Maurice Charles	4	Gettysburg	132	E. Middle St.
s Stambaugh, Frederick Michael	10	Hanover	125	P
s Sunderman, Frederick William	4	Juniata		Academy
s Wohlfarth, John Casper	8	Harrisburg	245	M
Seniors, 44.				

JUNIOR CLASS.**Class of 1920.****Candidates for the Degree of Bachelor of Arts.**

Group				
Baker, Caroline Maude	2	Lancaster	109	York St.
Belknap, Carlisle Parks	3	Jamestown, N. Y.	260	C
s Bingaman, Frank Warren	2	Esterly	312	P
s Bousum, Jacob St. Clair	1	York	227	P
Garman, Walter Earl	1	Reisterstown, Md.	258	C
s Hafer, Glenn Teeter	1	Chambersburg	322	P
Hildebrand, Clinton F.	1	York	111	P
Klinefelter, Walter	1	Glen Rock	220	P
Lehn, John Henry	1	York	111	P
r Markel, William Daniel	3	Evans City	240	M
r Miller, Guy Edward	1	Newville	219	P
Morgart, Margaret Virginia	2	York	209	N. Washington St.
s Neal, Clarence Arthur	1	Waynesboro	359	C
s Putman, Dwight Frederick	1	Somerset	327	P
Rice, Mary Elizabeth	2	Arendtsville	306	N. Stratton St.
s Robinson, Felix Griffin	1	Kempton, W. Va.	318	P
s Rudisill, Harold Becker	2	Hanover	127	P
s Schwartz, Perry Dean	2	York New Salem	203	P
Schwartz, Wayne Timalium	2	York New Salem	203	P
s Shearer, John Dwight	3	York Haven	219	P
s Sternat, Henry Wich	1	Towson, Md.	227	P
Stewart, Margaret Armstrong	2	Gettysburg	228	Baltimore St.
Stoner, Mildred Minerva	2	Gettysburg	129	Baltimore St.
s Wagner, John Hoy	1	Pottsgrove	427	P
s Worley, William Carson	1	Lititz	320	P
Yiengst, Kirby Mahlon	1	Myerstown	111	P

Candidates for the Degree of Bachelor of Science.

s Adams, Harvey Raymond	6	Gettysburg	Seminary Ridge
r Browning, Ralph Avery	4	Myersville, Md.	236-238 M
s Diehl, John	6	Greencastle	320 P
s-Fellenbaum, Austin Habecker	6	Mt. Joy	402 P
s Gillette, Eugene Merle	7	Vineland, N. J.	358 C
s Griest, Harold Mahlon	4	Philipsburg	161 C
r Kattenhorn, Christian Charles	4	Newark, N. J.	318 P
r Menchey, Albert John	4	Gettysburg	63 High St.
s Miller, Morell Waldo	5	Abbottstown	235-237 M
s Miller, Percy Edwin	4	Chambersburg	146 M
s Noon, Russell Alleyne	5	Listie	235-237 M
s Reen, Calvin Gilbert	7	Gettysburg	144 Springs Ave.
s Sharetts, John Lloyd	5	Gettysburg	34 Stevens St.
s Sherer, Clayton Millard	10	Manheim	207 P
r Slanker, Harry Washington	4	Gordon	106 P
s Spangler, Jacob Monroe	6	East Berlin	236-238 M
r Widder, George McAllister	5	Harrisburg	117 Springs Ave.
s Williams, Henry Jacob	6	New Freedom	220 P

Juniors, 44.

SOPHOMORE CLASS.

Class of 1921.

Candidates for the Degree of Bachelor of Arts.

Group

s Albig, John William, Jr.	2	McKeesport	405 P
r Campbell, Carl Merritt	3	Hagerstown, Md.	228 P
s Coble, Oliver Dewey	1	Williamson	411 P
s Cook, Roderick Walker	2	Dillsburg	301 P
Drawbaugh, Marie Perry	3	Harrisburg	32 Stratton St.
r Gresh, Levi David	2	Boyertown	419 P
Hershey, Charles Edward	1	York	135 N. Washington St.
Hollinger, Edith Deardorff	2	Gettysburg	Carlisle Road
s Houser, John Raymond	✓	Ruffsedale	201 P
Kerchner, Adelaide Marion	1	Lineboro, Md.	218 N. Stratton St.
Lauver, Marie Nayetta ✓	2	Altoona	W. Stevens St.
s Lind, Ralph Winfield	1	Altoona	225 P
s Livengood, William Potts	2	Birdsboro	325 P
Miller, Anna Harriet ✓	2	Gettysburg	536 Baltimore St.
s Myers, George Israel	1	Seven Valleys	411 P
r Peeling, James Hedley	2	York	258 C
Power, Genevieve Agnes ✓	2	Gettysburg	316 Baltimore St.
Rank, Allen Walter	3	Williamstown	135 N. Wash't'n St.
s Redcay, Paul Irvin	1	Hanover	118 P
Shaulis, Samuel Sylvester	1	Somerset	131 N. Washington St.
Sheads, Ida Salome ✓	2	Gettysburg	115 N. Stratton St.
Sheely, Edith Irene ✓	2	Gettysburg	143 Springs Ave.
s Showe, Lawrence Martin	1	Mason-Dixon	228 P
Springer, John Herbert	2	Harrisburg	137 M
Waldkoenig, Arthur Christian	1	Baltimore, Md.	31 Water St.

Candidates for the Degree of Bachelor of Science.

s Baum, Paul Donkel	4	Lemoyne	307	P
s Beers, George Lisle	10	Indiana	354	C
s Boath, William Frederick	4	Harrisburg	312	P
s Bortner, Ralph Adam	4	Glen Rock	117	P
s Briggs, Harold David	10	Johnstown, N. Y.	323	P
r Buedinger, William Anton	4	Jersey City, N. J.	318	P
Cash, Truman Buckey	6	Westminster, Md.	105	P
s Davies, Lewis Watkin	7	Berlin, N. Y.	252-254	C
s Etsheid, Karl William	4	Lemoyne	307	P
s Gardner, Glenn Markley	6	Gettysburg	154	York St.
Harbaugh, Raymond Welty	4	Beuna Vista Springs	417	P
s Hinman, Burton Louis	4	Westville, Conn.	133	M
s Ikeler, Earl Raymond	4	Bloomsburg	224	P
s Johnston, Burrell Elrod	6	Greensburg	347	M
r Klingaman, Foster Ellis	4	Berwick	418	P
Lippy, John David, Jr.	4	Gettysburg	47	Chambersburg St.
s Long, Max Dewey	6	Dauphin	157	N. Washington St.
s McLane, William Oliver, Jr.	5	Frostburg, Md.	348	M
s McCreary, Harry Clay	4	Indiana	252-254	C
s Marietta, Frederick Keck	4	Connellsville	161	C
s Martz, Harold Brehm	6	Harrisburg	233	M
s Miller, Carl Franklin	4	Juniata	226	P
s Miller, Charles Kitzmiller	7	Gettysburg	536	Baltimore St.
r Miller, Maurice Harry	4	Gettysburg	80	Steinwehr Ave.
Mumma, Paul Fisher	4	Waynesboro	157	N. Wash'gt'n St.
s Mumper, John Harold	9	Gettysburg	536	Baltimore St.
s Mundorff, Roy McClellan	7	Gettysburg		Centre Square
s Nicely, John Harris	4	Montoursville	218	P
s Noll, Paul Edward	7	Green Park		Academy
s Pfeffer, Fred George	4	Gettysburg	330	Baltimore St.
s Rice, John Stanley	6	Arendtsville	145	M
s Seaman, Lloyd Miller, Jr.	4	Stone Harbor, N. J.	241	M
s Shank, John Jay	4	Waynesboro	138	M
s Sheads, Robert Emory	7	Gettysburg	115	N. Stratton St.
s Sheely, Glenn Frances	4	Gettysburg		Harrisburg Road
s Spangler, George William	6	Harrisburg	233	M
s Starr, Allen Edward	7	Littlestown	105	P
s Treadwell, Edwin Wesley	6	Williamsport	240	M
s Trundle, Alfred Graham	5	Frederick, Md.	118	P
s Weaver, William Greenberry	6	Gettysburg	261	Baltimore St.
s Wolff, Charles Richard	6	Hanover	343	M
r Yohe, David Abraham	4	Gettysburg		R. D. 5
s Zarr, Robert Rush, Jr.	4	Nanticoke	347	M
s Ziegler, Earl Emerson	4	York	332	M

Sophomores, 69.

FRESHMAN CLASS.

Class of 1922.

Candidates for the Degree of Bachelor of Arts.

Group

Bortner, Robert Franklin	1	York	326	P
s Bower, Philip	1	Table Rock	309	Baltimore St.
Brunstetter, Byron Curtis	1	Gettysburg	304	Baltimore St.
Brunstetter, Max Russell	2	Gettysburg	304	Baltimore St.
s Cooper, Harry Bowman	3	Camp Hill	331	M
s Doub, John Wilfred	1	Middletown, Md.	202	P
r Dimpsey, Frank James	1	Trenton, N. J.	357	C
r Drawbaugh, Gertrude Elizabeth	2	Harrisburg	32	Stratton St.
r Endres, Joseph Earl	1	Huntingdon	108	P
s Flynn, Robert Lee	1	Washington, D. C.	306	P
s Fuhrman, Arthur Alphas	1	Hanover	122	P
r Gobrecht, Loy Clinton	1	Hanover	120	P
Gotwald, David Etter Small	1	York	262-264	C
s Guss, Walter Dimm	1	Philadelphia	401	P
Huber, Elizabeth Annan ✓	1	Gettysburg		Carlisle St.
Keck, George Harold	1	West Newton	135	N. Wash't'n St.
King, Paul Edward	1	Littlestown	336	M
Little, John Harold	1	Hanover	131	N. Washington St.
Manifold, Pauline Hickernell	2	Palmyra	18	E. Middle St.
s Medsger, Ralph Hayden	2	Scottdale	303	P
s Mertz, Walter Louis	1	Baltimore, Md.	202	P
r Minich, William Gordon	2	Loysville	421	P
s Murray, Thomas Frederic	2	North Bend	302	P
Musselman, Mary Katherine	2	Gettysburg	225	Springs Ave.
Nagele, Carl Robert	1	Conshohocken	419	P
s Overmiller, Howard Andrew	3	Spring Grove	326	P
s Papendick, Karl Louis	1	Eden, Md.	262-264	C
s Rice, Rueil Keedy Greitzner	3	Seven Stars	233	M
s Riley, Loyal Thomas	1	Oakland, Md.	319	P
s Saas, William Herman	1	East Clarksburg	W. Va.	303 P
Shumaker, Stella Barton	1	Gettysburg	28	Chambersburg St.
Slifer, Naomi Grace ✓	2	St. Thomas	218	N. Stratton St.
Spangler, Ruth Anna ✓	2	Gettysburg	18	Chambersburg St.
Swam, Olive Mary ✓	3	Brodbecks	218	N. Stratton St.
Taylor, Miriam Daisy ✓	2	Gettysburg	501	W. Middle St.
Weaver, Constance Cornelia ✓	2	Gettysburg	66	W. High St.
s Willard, Pierce Main	1	Frederick, Md.	327	P
Wolf, Ruth Sheely ✓	2	Westminster, Md.	18	E. Middle St.
Zeiders, Ruth Viola ✓	2	Gettysburg	204	Carlisle St.

Candidates for the Degree of Bachelor of Science.

Anderson, Matilda Hanna ✓	4	Altoona	204	Carlisle St.
r Atkinson, Dean Dunwoody	9	Brunswick, Ga.	210	P
s Baker, Michael Daniel	4	Waynesboro	359	C
s Baker, Walter Joseph	5	Portage	305	P
s Bream, Henry Trostle	6	Gettysburg		Broadway

s Brenneman, John	4 York	123 P
s Brown, Herbert Donald	9 Mechanicsburg	160 C
s Buckley, Jared Darlington	4 Norristown	145 M
s Daugherty, Frank Luther	6 Butler	134 M
s Davis, Donald Glen	10 Newberry	407 P
DeRosa, Sylvester Frank	5 New Haven, Conn.	363 C
Eberman, Theodore Elmer	5 Baltimore, Md.	262-264 C
Elsesser, Beulah Ann	6 York	W. Stevens St.
r Erb, Lester Lynn	5 Philadelphia	360-362 C
s Evans, Raleigh Nelson	5 Harrisburg	331 M
r Fink, Walter John	9 York	220 P
Floto, D. Guy	6 Myersdale	33 Water St.
Floto, Norwood Shipley	6 Connellsville	159 C
r Fogelsanger, Samuel Whistler	6 Chambersburg	141 M
s Gentzler, Jennings Mason	4 York New Salem	204 P
Gerberich, Grant D.	10 Middletown	117 Springs Ave.
s Gingerich, Lester Earl	7 York	204 P
s Hennigh, Horace James	6 Palmyra	208 P
s Hersh, Henry McClellan	6 New Oxford	146 M
s Herting, George Claire	4 Biglerville	328 P
r Jacobs, Robert Llewellyn	4 Spring Grove	259 C
s Kerr, Horace J.	10 Buffalo, N. Y.	257 C
s Krebs, William Albert	9 Hanover	107 P
s Kyle, James William, Jr.	4 Mifflintown	158 C
Lawyer, Paul Ezra	4 Westminster, Md.	135 N. Wash. St.
s Leavy, John Peter	7 Harrisburg	312 P
s Mahaffie, Ralph	4 Renovo	333 M
s Markel, Walter Henry	10 Hanover	241 M
s Mathias, Robert Burns	5 Mt. Washington, Md.	205 P
McBride, Henry Ellsworth	4 Brunswick, Md.	328 P
s McDonnell, John Henry	4 Gettysburg	140 W. Middle St.
s McDowell, James Waddell	4 Butler	407 P
s McGaughy, John Alexander	9 Gettysburg	Knoxlyn
s MacInnes, James Allan	9 Greensburg	255 C
s Miller, Charles Douglas	5 Pottsville	141 M
r Miller, Elder Edward	5 Homer City	153 C
Mumma, Elsie	6 Hummelstown	204 Carlisle St.
r Naudain, Morgan Camp	10 Sparrows Point, Md.	157 C
s Olinger, Paul Francis	10 Hanover	107 P
s Orth, Harvey Clinton	4 Lewistown	332 M
s Oyler, Robert Monroe	4 Gettysburg	218 York St.
r Panebaker, David Edward	4 Hanover	120 P
Pegg, Edwin Larue	4 Bloomsburg	224 P
s Reif, Fulmer Jacob, Jr.	4 Harrisburg	333 M
Rittasé, Ralph Adolphus	4 Hanover	117 P
s Ruder, Carl L.	5 Mt. Pleasant	201 P
Rudisill, Donald Everett	7 Altoona	427 P
s Rudisill, John Calvin	7 Littlestown	158 C
s Ryder, Charles Franklin	4 Chambersburg	322 P
Sahm, Russell Luther	7 Mahaffey	423 P
s Saylor, Howard Melvin	4 Johnstown	218 P
s Sheffer, John Allen	4 Spring Grove	119 P
s Shoenberger, Alden Kresge	8 Pottsville	137 M
Sieling, Charles Small	5 Railroad	124 P
s Sincell, Donald Roderick	6 Oakland, Md.	348 M

STUDENTS IN COLLEGE

149

s Skidmore, Charles Alfred	10	San Antonio, Tex.	242-244	M
s Smith, Roger Barrick	4	Thurmont, Md.	401	P
r Smith, Roy William	9	Dillsburg	425	P
s Snyder, John Edward	7	Altoona	342	M
s Weaver, Leonard Ray	10	Pottsgrove	411	P
s Weikert, John Maurice	9	McKnightstown	342	M
s Wertman, Roscoe Edwin	7	Bloomsburg	222	P
s Winebrenner, LeRoy Hartzell	9	Gettysburg	783	Baltimore St.
s Wolfe, Edgar Leroy	10	Dillsburg	301	P
r Zweifel, Arthur Harrison	9	Harrisburg	319	P
				Freshmen, 109.

PARTIAL COURSE STUDENTS.

s Blocher, Charles Huber	Gettysburg	Carlisle St.
s Bowers, Ralph Firestone	Frederick, Md.	241 M
s Braunstein, William Peter	Union Hill, N. J.	261-263 C
s Brown, Carl Cresswell	Greensburg	142 M
s Buhrman, Samuel Ross	Rouzeville	417 P
r Campbell, Lemuel Carl	Philadelphia	337 M
s Cofrances, Louis William	New Haven, Conn.	363 C
s Gennaria, Charles Reed	Bloomsburg	245 M
s Gibson, Joseph Wilbur	Indiana	354 C
Gülck, Georg Kron	Aalborg, Denmark	223 P
r Guy, Loren Pritchard	Norfolk, Va.	104 P
Hake, Anna Marguerite	Gettysburg	227 W. Middle St.
Lauver, William Wieand	Altoona	225 P
r Liebe, Harry	Atlantic City, N. J.	324 P
s Lutz, Francis Creveling	Bloomsburg	245 M
r Pohl, William Frederick	Butler	410 P
s Porterfield, Hubert Lester	Hagerstown, Md.	118 P
s Reller, Louis Smith	Pittsburgh	134 M
s Widman, Harry Frederick	West New York, N. J.	261-263 C
		Partial Course, 10.

SPECIAL STUDENTS.

Lefever, G. W.	Gettysburg	61	E. Middle St.
Myers, Janet	Marion	154	York St.
Reynolds, Walter Daniel	Gettysburg	128	N. Washington St.
Rosenstengel, Bettie K.	Gettysburg		Broadway

STUDENTS IN ATTENDANCE DURING THE STUDENTS' ARMY TRAINING CORPS PERIOD ONLY.

s Achenbach, Edward Zimmerman	Pine Grove
s Adler, Edward Reeves	Canton, Ohio
s Ambrose, Anthony M.	Lebanon
s Andrews, Joseph W.	Philadelphia
s Anstadt, Charles Benson	York

s Avers, Clifton Lorraine	Keyser, W. Va.
s Barnes, Lester William	Laceyville
s Bavalack, Daniel, Jr.	McAdoo
s Beckmyer, David Edward	York
s Behmer, John Henry	Lititz
s Belles, Claude Isaac	Berwick
Bigham, Charles Andrew	Gettysburg
Bishop, Blaine Charles	Waynesboro
s Bitner, William Harry	Connellsville
s Bowman, Wellington Roy	Middletown
s Boyd, Ethelbert Talbot	Renovo
s Boyer, Roy Cletus	York New Salem
s Breisch, Ralph Joseph	Catawissa
Briggs, Merrill Glen	York
s Brillhart, George Frederick	Windor
s Bupp, Paul Lavoy	York
s Burris, Robert Irvin	Renovo
s Cameron, John Brotton	Canton, Ohio
s Casey, Albert Thomas	Benton
s Cassidy, Charles Ralph	Altoona
s Childs, Edwin Early	Howardville, Md.
s Clabaugh, John Edward	Frederick Md.
s Cline, Vincent Forbes	Greensburg
s Close, Charles	West Chester
s Coleman, Lloyd Spencer	Orangeville
Crowther, Gilbert Royer	Norristown
s Cushing, Emory Clayton	San Antonio, Texas
Dieffenbach, Ernest Guy	Harrisburg
s Deitz, Sterling St. Clair	Red Lion
s Donaldson, William Lawrence	Fairfield
s Dressler, Clement Spencer	Norristown
s Dunlap, George Henry	Smithfield
s Eckenrode, Norman Joseph	Altoona
s Englehart, Ellwood Lorain	Accident, Md.
s English, James Ray	Renovo
s Essig, Fred Christian	Harrisburg
s Everhart, Martin Luther	York
s Fackler, William Peter	Shippensburg
Farmer, Clayton Stultz	Marietta
s Fegley, Lawrence Walter	Catawissa
s Fisher, Homer Victor	Bloomsburg
s Flanagan, Sherman Edward	Walkersville, Md.
Fleck, George Slayman	Altoona
s Fluck, Paul Lewis	West Chester
s Fogelsanger, Harold Harry	Chambersburg
s Fox, Charles Edward	Renovo
s Fox, Melvin Dewey	Doylestown
s Fox, Ralph Lyman	Mount Pleasant
s Francis, Richard Fowles	Greensburg
s Frank, Noble Lee	Harrisburg
s Fraunfelter, Homer Lenhart	Mohrsville
s Fuller, Francis Royal	Beach Haven
Gallagher, Paul Elliot	Norristown
s Ganser, Francis Oberholtzer	Norristown
s Garrett, Paul Rossville	Hanover

s Gaumer, Edward Kunath
 Gemmill, Thomas Harold
 s Gingrich, Roy Mark
 s Goshen, Frank Barnitz, Jr.
 s Gress, Howard Dewey
 s Gress, Irvin Schley
 s Grove, Ohmer Raymond
 s Gullborg, Harry Rudolph
 s Haag, Harry Frederick
 Haas, Harry Herman
 s Haehnlen, Frederick Philip
 s Haldeman, John Hampton
 Hale, John Albert
 s Haley, Jeremiah J.
 s Harp, Jerauld Byron
 s Harpster, Wendell Vance
 s Hartzel, Paul
 s Hawkins, Edward Arlington
 Heindel, Jeanne Swope
 s Helm, John Tiffany Stansfield
 s Hench, Charles Hassler
 s Hoffman, George Edward
 s Hoover, Karl Albert
 s Hopler, Alexander S.
 s Hower, Henry Harvey
 Hudock, John Francis
 s Hughes, Charles Glenwood
 Jacobs, Clair Milton
 s Johnson, Earl Franklin
 s Johnson, Walter Harold
 s Keller, Charles Oliver
 s Kersteter, William Walton
 s Kester, Ray Roscoe
 s King, Wilmer Emanuel
 s Kirkhuff, Asa Washington
 s Kite, Gordon Hart
 s Knouse, Paul George
 s Knouss, Myron Henry
 Koelle, Sylvester Paul
 s Kremer, Charles B.
 s Krumlauf, Paul Anson
 s Lansberry, Arnold Glenn
 LePeau, Nathaniel Xavier
 s LePeau, Philip Howard
 Lestz, Isador
 s Long, John Henry
 s Luke, Robert James
 s MacDougall, Donald Wilson
 s Mahaney, George Thomas
 Markley, Charles Donald
 s Martin, Neil Edmund
 McCoy, Paul Fasic
 s McNeal, William Clarke
 s Mead, Samuel David
 s Metzger, Paul Albert

Urbana, Ohio
 Red Lion
 Palmyra
 Mifflin
 Myersdale
 Myersdale
 Steelton
 Renovo
 Robesonia
 Union, N. J.
 Harrisburg
 Pine Grove
 Abbottstown
 Catawissa
 Smithsburg, Md.
 Philipsburg
 West Chester
 Spring Grove
 Gettysburg
 New Windsor, Md.
 York
 Williamstown
 Highspire
 Berwick
 Catawissa
 Freeland
 West Chester
 Gettysburg
 Laceyville
 Philadelphia
 Grantsville, Md.
 Harrisburg
 Millville
 Harrisburg
 Ashley
 Norristown
 Biglerville
 Arendtsville
 Altoona
 Pottsgrove
 Canton, Ohio
 Clearfield
 Warren, Ohio
 Warren, Ohio
 Gettysburg
 Pine Grove
 Morganza
 Philadelphia
 Sparrows Point, Md.
 Harrisburg
 Birdsboro
 Juniata
 Mifflintown
 Harrisburg
 Steelton

s Michener, Ralph Edgar	Harrisburg
s Miller, Agnew Franklin	Centreport
s Miller, Harry Bowman	Harrisburg
s Miller, John Delaplane	Woodsboro, Md.
Miller, Robert LeRoy	Berlin
s Miller, Raymond Willard	Glenville
s Montgomery, John Barrick	Huntingdon
s Moskal, Michael	Phoenixville
s Murphy, Clair Edward	Altoona
s Murray, Fred Huston	Harrisburg
s Musselman, William Stanley	Norristown
s Nuss, Gordon Eugene	Catawissa
Orendorff, Edgar Charles	Hanover
Oyler, Hubert Levi	Gettysburg
s Parker, Clair Francis	Laceyville
s Parker, William Brinton	West Chester
s Patterson, Jairus Claire	Orangeville
s Patterson, James Thornton	Cumberland, Md.
s Phillips, Henry Carroll	Frederick, Md.
s Pollock, Charles McGinnes	Harrisburg
s Potteiger, Charles Freeman	Leesport
s Price, Abram Emmert	Waynesboro
s Ramsburg, Jesse Claggett	Frederick, Md.
s Remsburg, Wilbur Stroh	Funkstown, Md.
s Rhawn, George Bruce	Catawissa
s Rice, Ray Edward	Seven Stars
s Riegel, Leo Albert	Catawissa
s Rife, Edwin James	York Haven
s Rinehart, William DeLancey	York
s Ritz, Sherwood Franklin	Red Lion
s Robison, Edward George	Warren, Ohio
Routzahn, Samuel Ludwig	Myersville, Md.
s Sadtler, William Barrett	Three Square, Va.
s Sands, Bruce Donald	Orangeville
s Schaff, Fred Lemuel	Greencastle
s Schafhirt, Richard Witherspoon	Mechanicsburg
s Schroyer, Thomas Lawson	Lewistown, Md.
s Schwartz, William Maine	York New Salem
s Shaffer, Charles Bruce	Hyndman
s Shaffer, Kenneth Linwood	Hyndman
Sharar, Earl Frank	Newport
s Sheffer, Russell Samuel	Steelton
s Shelley, Paul Webster	Mechanicsburg
Shoffstall, William Charles	Lykens
s Shultz, Joseph Leith	Myersdale
s Shumaker, John Bryan	Harrisburg
s Shuman, David Reuben	Catawissa
s Small, Philip Harold	York
s Smith, Clair Wilson	York
* Smith, Richard Lawrence	Waynesboro
s Snook, Carl Webster	Rockey Ridge, Md.
s Snyder, Harold A.	Renovo
s Spancake, Elmer Lee	Pine Grove
s Spink, Ross Arnold	Harrisburg

* Deceased Dec 4, 1918.

Stambaugh, Gerald Edward
 s Stansbury, Edward Lewis
 s Sterner, Ernest Levere
 s Stickell, Daniel Ross
 s Stine, Russell Warren
 s Stock, Roy Albert
 s Stout, Lynn Francis
 s Swanson, Arthur Herbert
 s Swoyer, Clarence Bernard
 s Taggart, Austin Lee
 Tavani, Henry
 s Thomas, John Francis
 s Torgesen, Harry Emanuel
 s Trimmer, Charles Arthur
 Ullrich, Kenneth Karl
 s Unangst, Edward Russel
 Wagner, Charles Shakespeare
 Wagner, Roland William
 s Walp, Frank Wilson
 s Waltz, George Frederick
 s Watson, William Lewis
 s Weaver, Penn Marlin
 s Wentz, Allen Roscoe
 s Wiegand, William Scott
 Wilhide, Glenn Castle
 s Williams, Jese Stanley
 Wilson, Robert Alvin
 s Winters, Alonzo Kolb
 s Wolf, Clarence Lester
 Wolf, Spurgeon Louis
 s Wolfe, Benjamin Henry
 s Wright, Vernon Mellinger
 s Wueschinski, Paul Gustav
 s Wynkoop, James Kenneth
 s Young, Walter Franklin
 s Zartman, Ira Forry
 s Zecker, Abraham

Hanover
 Mt. Washington, Md.
 York
 Hagerstown, Md.
 Allentown
 Littlestown
 Chambersburg
 Mt. Pleasant
 Renovo
 Norristown
 West Chester
 York
 West New York, N.J.
 Shippensburg
 Lewistown
 Orangeville
 Harrisburg
 Tamaqua
 Beach Haven
 Chester
 Harrisburg
 Millersburg
 Spring Grove
 Hazleton
 Walkersville, Md.
 York
 Littlestown
 Hazleton
 Harrisburg
 Reisterstown, Md.
 Harrisburg
 Harrisburg
 Steelton
 Shippensburg
 Red Lion
 Lititz
 Union Hill, N. J.

STUDENTS IN THE ACADEMY.

SUB-FRESHMAN CLASS.

Allen, Thomas Harrison	St. Thomas	111 M. B.
Artz, William Walter	Hagerstown, Md.	63 Lincoln Ave.
Bowman, Arthur Loucks	Hanover,	313 M. B.
Colestock, Leslie Rholeshouse	New Oxford	311 M. B.
Congelton, Vernon Jerome	Brooklyn Park, Md.	113 M. B.
Eby, Harry B.	Palmyra	321 M. B.
Eshenaur, Theodore Wilbur	Harrisburg	109 M. B.
Fife, John Franklin	Shrewsbury	Water St.
Fogelsanger, Samuel Whistler	Chambersburg	302 M. B.
Glenn, James Donald	Fairfield	Chambersburg St.
Gobrecht, Loy Clinton	Hanover	143 Carlisle St.
Graham, Gordon William	Gettysburg	127 N. Washington St.
Hamm, Melvin Dewey	Brodbecks	102 M. B.
Hamsher, Reuben Harold	Fayetteville	304 M. B.
Hyson, Edward William	New Freedom	Water St.
Metz, Ross Guisler	Petersburg	
Jensen, Jacob Roed	Aalborg, Denmark	101 M. B.
Jacobs, Robert Llewellyn	Spring Grove	107 M. B.
Kelly, Allen Wilber	Taneytown, Md.	107 M. B.
Kookan, Thomas Franklin	Carlisle	317 M. B.
Landis, Millard E.	Carlisle	202 M. B.
Millar, Peter Jacob	New Oxford	102 M. B.
Miller, Elder Edward	Homer City	202 M. B.
Minich, William Gordon	Loysville	305 M. B.
Myers, Philip Trone	Westminster, Md.	313 M. B.
Myers, Peter Wesley	York	319 M. B.
Myers, Calvin Reuben	Lewistown	103 M. B.
Naudain, Morgan Camp	Sparrows Point, Md.	321 M. B.
Overmiller, Matthew Stanley	Quay East Prospect	302 M. B.
Panebaker, David Edward	Hanover	143 Carlisle St.
Pegan, Philip Eugene	Spring Grove	107 M. B.
Sweyer, Walter Jenkins	Newville	111 M. B.
Thomas, Ellis Allen	Spring Grove	107 M. B.
Woods, David Walker, Jr.	Gettysburg	113 M. B.
Wortz, George Bryant	Fairfield	Water St.

Sub-Freshmen, 35.

UPPER MIDDLE CLASS.

Alleman, Benson Suesserot	Gettysburg	Confederate Ave.
Beale, George Hodge	Leechburg	307 M. B.
Bream, Walter Robert	Gettysburg	Confederate Ave.
Clutz, John Jacob	Gettysburg	159 Broadway
Englehart, Clayton Charles	Accident, Md.	202 M. B.
Grimm, Emma Hermine	Louise	228 Carlisle St.
		Gettysburg

Heffner, William Burkhardt	Mohrsville	312 M. B.
Heindel, Norman Hadley	Gettysburg	218 Carlisle St.
Hutchison, Samuel Forrest	West Chester	102 M. B.
Lange, Frederick Shepherd	Asbury Park, N. J.	305 M. B.
McIlhenny, Elizabeth Lott	Gettysburg	60 Chambersburg St.
Miller, William Harold	Grantsville, Md.	325 M. B.
Overmiller, Roy Allen	East Prospect, Md.	301 M. B.
Richardson, Ephraim Miller	Medford, Md.	312 M. B.
Roberts, Harold Lawrence	Leechburg	309 M. B.
Runyan, James Nelson	Ellwood City	304 M. B.
Sachs, Harry Willis	Pittsburgh	111 M. B.
Schrack, Earl Vincent	Bridgeport	103 M. B.
Skidmore, Scott Osborne	San Antonio, Texas	301 M. B.
Sober, David Bird, Jr.	Leechburg	313 M. B.
Stallsmith, Ruth Virginia	Gettysburg	1 York St.
Waybright, Howard David	Gettysburg	109 M. B.
Waybright, Walter Ernest	Littlestown	105 M. B.
Wolf, John Henry	Westminster, Md.	303 M. B.
Wolff, Dewey Elmer	Gettysburg	State Road
Upper Middlers, 25.		

LOWER MIDDLE CLASS.

Boyles, Robert Clay	Davis, W. Va.	321 M. B.
Counsil, Charles Albert	Laquin	323 M. B.
Hagerman, James Augustus	Asbury Park, N. J.	325 M. B.
Laird, George D.	Trenton, N. J.	104 M. B.
Nipple, Thomas Henry	Clinton, Ohio	311 M. B.
Ramer, Paul Bernard	Gettysburg	122 Chambersburg St.
Snyder, John Arthur	New Oxford	323 M. B.
Taylor, Darrell	Laquin	308 M. B.
Vangelder, Robert Harlan	West Haven, Conn.	308 M. B.
Widle, Charles Chambers	Loysville	302 M. B.
Lower Middlers, 10.		

JUNIOR CLASS.

Barclay, Kenneth Bradley	Sinnamahoning	308 M. B.
Bevan, George Draper	Paterson, N. J.	202 M. B.
Delap, John Milton	Gettysburg	41 Railroad St.
Grecht, William	Baltimore	303 M. B.
McNaul, Robert Wayne	Juniata	305 M. B.
Smith, Henry Philips	Baltimore, Md.	310 M. B.
Tolen, Burton Young	Asbury Park, N. J.	315 M. B.
Tufts, Edward N.	New Albany, Ind.	315 M. B.
Juniors, 8.		

SUMMARY.

Number of Students in College 1918-1919.

Graduate Students	5
Seniors	44
Juniors	44
Sophomores	69
Freshmen	109
Partial Course	19
Special Students	4
	<hr/>
Students present for S. A. T. C. period only.....	294
	<hr/>
Collegiate Department	500
Academy Department	78
	<hr/>
	578

COMMENCEMENT 1918.

Salutatory.

Frederick Ritscher Knubel.

Commencement Orator.

William Howard TaftEx-President of the United States

Valedictory.

Harold Luther Creager.

GRADUATES.

Bachelor of Arts.

Bare, Ethel Grace ✓	Gotwald, Luther Alexander
Bertz, Roland George	Hamme, John Alfred
Creager, Harold Luther	Knubel, Frederick Ritscher
Deardorff, Eva Clare	Musselman, Helen Nunemaker ✓
Deibert, Alan Thomas	Noll, Ruth Marie ✓
Drawbaugh, Jacob Wilbur	Ricker, Charles Cyrus
Duff, Stewart Emmons	Saul, Harry Luther
Fisher, Nelson Franklin	Secrist, Mark Howard
Floto, Max Crawford	Snyder, John Houston
Gauger, William Clarence	Wagner, Ralph LaShelle
Weaver, Lorna Jeannette	

Bachelor of Science.

Barbehenn, John Berthold	Mizell, Russell Francis
Brown, Harry Alvin	Orr, James Carlyle
Buffington, Chester Miles	Power, Edmund Emanuel
Clemens, Arthur Knisely	Rouzer, Harvey Webster
Croll, John Jr.	Sachs, George Amos
Ernest, Jay Blair	Sheffer, Paul Ritchie
Finn, Howard Nelson	Shockey, Ralph Irl
Gehauf, Bernard	Shriver, Ralph Edwin
Harper, William Butler	Snyder, Arthur Kenneth
McCreary, Ralph Work	Snyder, Charles Franklin
McNabb, Wallace Morgan	Wells, Hibbert Preston
Matter, Lawson Deacon	Wible, Charles McCreary

ADVANCED DEGREES.**Master of Arts.**

Mary Martha Bausch	Bryn Mawr, Pa.
Victor Wilson Bennett	Frostburg, Md.
Benjamin Frank Kulp	Factoryville, Pa.
Ottis Howard Rechard, Jr.	York, Pa.
John Elmer Spangler	Gettysburg, Pa.
Anne U. Wert	Harrisburg, Pa.

HONORS AND PRIZES.**GENERAL FINAL HONORS.**

Harold Luther Creager	Frederick Ritscher Knubel
Helen Nunemaker Musselman	

CLASS HONORS.**Senior.**

Harold Luther Creager	Luther Alexander Gotwald
Alan Thomas Deibert	Frederick Ritscher Knubel
Nelson Franklin Fisher	Wallace Morgan McNabb
William Clarence Gauger	Helen Nunemaker Musselman
Charles Cyrus Ricker	

Junior.

Martin Luther Faust
Ralph Lee Hankey

Donald Fisher Lybarger
Ralph Edward Stine

Sophomore.

Frank Warren Bingaman
Cyrus Stoner Fleck

James Carroll Lee
Margaret Virginia Morgart
Calvin Gilbert Reen

Freshman.

Milton Valentine Burgess

DEPARTMENTAL FINAL HONORS IN GREEK.

Frederick Ritscher Knubel

GRAEFF PRIZE IN ENGLISH.

Roland George Bortz

With Honorable Mention of

Frederick Ritscher Knubel

William Clarence Gauge

BAUM MATHEMATICAL PRIZE.

James Carroll Lee

With Honorable Mention of

Calvin Gilbert Reen

BREWER PRIZE IN GREEK.

Dwight Frederick Putman

With Honorable Mention of

Walter Earl Garman

MUHLENBERG FRESHMAN PRIZE.

Paul Irvin Redcay

With Honorable Mention of

Adelaide Marion Kerchner

PRIZES IN DEBATE.**First Prize.**

Roland George Bortz

Harold Luther Creager

Max Crawford Floto

Second Prize.

Clarence Arthur Neal

James Hedley Peeling

John Lloyd Sharets

HONORARY DEGREES.**CONFERRED AT COMMENCEMENT 1918.****Doctor of Divinity.**

Rev. Ellis B. BurgessConnellsville, Pa.

Rev. H. W. A. HansonHarrisburg, Pa.

Rev. Pres. Harvey D. Hoover, Ph.D.....Carthage, Ill.

Doctor of Laws.

Richard C. MorseNew York, N. Y.

William C. SproulChester, Pa.

Doctor of Pedagogy.

Headmaster Arthur E. BrownHarrisburg, Pa.

INDEX.

	Page.		Page.
Absences, Rules Governing	106	Buildings and Rooms, Gettysburg	
Academy, Gettysburg	138	Academy	138
Accounting, Course in	75	Business Law	75
Admission:		Business Organization	76
Rules Governing	20		
Requirements for	21, 26	Calculus	84
Advanced Standing	23	Calendar	2, 3
Admission Subjects in Detail..	26	Chapel Services	106
Advanced Standing, Admission to	23	Church Services	106
Advanced Degrees, 1918	158	Class Advisers	105
Advisers, Class	105	Class Honors	112
List of	16	Class Memorials	131
Advisers, Group	105	Cement Testing	90
Aid for Students	114	Certificates to Partial Students..	110
Algebra	83	Chemistry and Physics Group (IV)	41
Alumni Associations	137	Chemistry:	
American Government and Politics	77	Courses of Instruction	80
Anatomy and Physiology	79	Admission Requirements	29
Anglo-Saxon	60	Chemical Laboratory	125, 130
Astronomy	84	Christian Evidences	69
Astronomical Observatory	130	Civil Engineering Group (VII)..	52
Athletics, General Statement ...	134	Civil Engineering Courses	91
Athletic Council, Members	18	College Dormitory Rooms	119
Athletic Field	131	College Fees and Tuition	117
Athletic Field House	129	Commencement, 1918	157
Attendance, Rules	106	Commerce and Finance Group (VI)	49
		Committees:	
		Of Board of Trustees	9
		Of the Faculty	16
Bacteriology, Sanitation and	80	Comparative Government	77
Banking, Course in Money and..	74	Comparative Philology	68
Baum Mathematical Prize	112	Conditions and Deficiencies	108
Bequest, Form of	136	Constitutional Law	77
Bible: Courses in English Bible.	68	Contracts and Specifications	93
Biblical Literature	68	Cottage Hall	128
New Testament Study	63	Council, Athletic, List of Members	18
Bills, Tuition and Fees	117	Council, Student	105
Biology, Chemistry and Physics		List of Members, 1918-19	18
Group (V)	45	Courses of Instruction	59
Biology and Hygiene:		Courses of Study in Gettysburg	
Courses of Instruction	78	Academy	138
Admission Requirements	30		
Biological Laboratory	125	Deficiencies, Rules Governing ...	108
Board of Trustees:		In Admission	23
List of Members and Officers ..	8	Degree, Master's	110
Standing Committees	9	Degrees Conferred in 1918:	
Boarding Clubs	118	Bachelor's	157
Brua Chapel	130	Honorary	160
Buildings	128	Master's	158

	Page.		Page.
Demerits	106	Finance, Public	74
Department Honors	112	French:	
Descriptive Geometry	89	Courses of Instruction	66
Deutscher Verein	62	Admission Requirements	28
Dormitory Buildings	128		
Rooms, Rent, Charges, etc....	121	General Information	105
Dupont Scholarship	115	Geography: Admission Require-	
		ments	26
Economics	74	Geology	82
Education. Courses in	73	German:	
Electives, Rules Governing	107	Courses of Instruction	60
Elective Subjects for Admission..	21	Admission Requirements	28
Electric Lights in Dormitories..	122	Gettysburg Academy	138
Electrical Engineering Group (X)	55	Gettysburg, Location of	7
Electrical Engineering Courses	88, 96	Glatfelter Hall	129
Electrical Machinery	96	Grades, Method of Designation..	109
Electrical Measurements	86	Graduates, List, 1918	157
Electricity, Courses in....	87, 88, 96	Graduation, Requirements for...	110
Electives	107	Graeff Prize	113
Elinore Taylor Brewer Greek		Greek and Latin Group (I)	32
Prize	113	Greek:	
Embryology	79	Courses of Instruction	62
Employees, List of Officers and..	14	Admission Requirements	26
Employment for Students	115	Elementary Courses for Stu-	
Engineering Courses:		dents in Groups I and II	62, 63
General Statement	88	Greek Prize	113
Civil and Municipal Engineering	91	Group System of Courses	31
Mechanical Engineering	94	Gymnasium:	
Electrical Engineering	96	Courses of Instruction	80, 107
Engineering Equipment	126	Equipment	130
Engineering Fees	118		
Engineering Library	97	Hassler Latin Prize	113
English Bible Courses	68	Heat Power Engineering	95
English, Courses of Instruction..	59	Highways, Course in	93
Admission Subjects	25	Histology	79
English and American Literature	59	Historical Sketch of the College..	4
English History	70	History and Political Science	
Entrance Requirements:		Group (III)	38
General Statement	21	History:	
Subjects in Detail	25	Courses of Instruction	69
Requirements for Separate		Admission Requirements	28
Groups	32-58	Roman Constitutional History.	66
Equipment of the College	125	History of Philosophy	71
Ethics	71	History of Education	73
Evidences of Christianity	69	Honorary Degrees Conferred, '18	160
Examinations, Rules	108	Honors, Rules Governing Award of	111
Expenses; Estimated for one year	118	Honors and Prizes, List, 1918..	158
In Gettysburg Academy	141	Honor System	24
		Hydraulics	90
Faculty: List of Members	10	Hygiene, Personal and Public..	80
Committees	16		
Fees, Tuition and Expenses	117	Inspection Trips for Engineers..	97
Gettysburg Academy	141		

	Page.		Page.
International Law	77	Modern Language Requirements..	22
Instructors	10	Money and Banking, Course in..	74
Italian Course	68	Muhlenberg Freshman Prize.....	112
Kinematics	94	Municipal (Sanitary) Engineering Group (VIII)	52
Laboratories: Equipment	125	Museum	127
Fees	117	Musical Organizations	134
Labor Problems	75	National Resources	77
Latin and Modern Language Group (II)	35	New Testament Study in Greek..	63
Latin:		Nixon Athletic Field	131
Courses of Instruction	64	Officers, Lists:	
Admission Requirements	27	Board of Trustees	8
Lectures	66	Faculty	10
Law: International	77	Student Council	18
Business Law	75	Alumni Association	137
Constitutional Law	77	Oratorical Contests	133
Roman Law	66	Organic Chemistry	81
Lectures: Faculty, and Y.M.C.A.	134	Outline of Groups	32
Lectureships	87	Partial Course Students	23
Library: General Statement	124	Pennsylvania Hall	128
Of Literary Societies	124	Philology, Comparative	68
Of Engineering	97	Philosophy Courses	70
Linguistic Science	68	Physical Culture	80, 107
Literary Societies	133	Physical Laboratory	125
Logic	71, 72	Physics:	
Machine Design	94	Courses of Instruction	85
Masonry	93	Admission Requirements	29
Master's Degree:		Physiology, Anatomy and	79
Requirements	110	Political History of Europe	69
Conferred, 1918	158	Political Science Courses	76
Material Equipment of College..	124	Power Plant Design	95
Materials Testing	90	Prescribed Subjects for Admission	21
Mathematical Physics	87	Presidents of the College 1832-1919	6
Mathematical Prize	112	Press Club	135
Mathematics:		Prizes: General Statement	112
Courses of Instruction	83	List of Awards, 1918	158
Admission Requirements	26	Property of Students	123
McKnight Hall	128	Psychology	70, 73
Mechanical Engineering Group (IX)	55	Publications	135
Mechanical Engineering Courses..	94	Public Finance	74
Mechanical Drawing Courses....	89	Public Speaking	60
Admission Requirements	28	Railroads, Course	91
Mechanics	86, 89	Reading Room	124
Memorials of Classes	131	Records, Grades, etc.	109
Military Credits	104	Re-examinations	108
Military Science and Tactics:		Religion, Philosophy of	72
General Statement	98	Report of Student's Record	109
Courses of Instruction	100	Requirements for Admission	21
Mineralogy	82	Requirements for Graduation....	110

	Page.		Page.
Roman History	66	Special Students	24
Roman Law	66	List, College, 1918-19	143
Roman Constitutional History..	66	List, Gettysburg Academy	154
Rooms: Assignment	119	Student Council	105
Rental Rates	121	List of Members, 1918-19	18
Samuel Garver Greek Prize	114	Students' Interests	133
Samuel Garver Latin Prize	114	Student Property	123
Sanitation and Bacteriology	80	Student Publications	135
Sanitary Science	80	Surveying	91
Sanskrit	68	Teachers: Note on Preparation	
Scholarships and Aid for		for Teaching	136
Students	114	Terms and Vacations	106
Semester Hour Defined	31	Thaddeus Stevens Hall	129
Seminaries:		Treasurer's Bills	116
Civil Engineering	93	Trigonometry	83
Electrical Engineering	97	Trustees, Board of	8, 9
Mechanical Engineering	96	Tuition and Fees, College	117
Physics	87	Gettysburg Academy	138
Sewerage	93	Unit Defined	21
Shopwork	94	Vacations	106
Sociology	71	Water Supply Engineering	93
Spanish Courses	67	Y. M. C. A.	133
Special Students	24	Zoölogy, Courses	78
Statics and Dynamics	89	Admission Requirements	30
Structural Design and Drafting..	92		
Stuckenberg Lectureship in			
Sociology	87		
Students:			
Partial Course	23		

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Congress July 16, 1904.

CALENDAR FOR 1919-1920-1921

Session days are indicated by bold-face type.

1919.

September							October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	1	2	3	4	5	6	..	..	..	1	2	3	4	..	..	..	..	..	1	..	1	2	3	4	5	6	
7	8	9	10	11	12	13	5	6	7	8	9	10	11	2	3	4	5	6	7	8	7	8	9	10	11	12	13
14	15	16	17	18	19	20	12	13	14	15	16	17	18	9	10	11	12	13	14	15	14	15	16	17	18	19	20
21	22	23	24	25	26	27	19	20	21	22	23	24	25	16	17	18	19	20	21	22	21	22	23	24	25	26	27
28	29	30	..	..	..	..	26	27	28	29	30	31	..	23	24	25	26	27	28	29	28	29	30	31	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	..	..	..	..	..	..	..	..	..	..	..	..	..

1920.

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	1	2	3	1	2	3	4	5	6	7	..	1	2	3	4	5	6	..	..	..	..	1	2	3
4	5	6	7	8	9	10	8	9	10	11	12	13	14	7	8	9	10	11	12	13	4	5	6	7	8	9	10
11	12	13	14	15	16	17	15	16	17	18	19	20	21	14	15	16	17	18	19	20	11	12	13	14	15	16	17
18	19	20	21	22	23	24	22	23	24	25	26	27	28	21	22	23	24	25	26	27	18	19	20	21	22	23	24
25	26	27	28	29	30	31	29	..	..	..	..	..	..	28	29	30	31	..	..	..	25	26	27	28	29	30	..
May							June							July							August						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	1	8	..	..	1	2	3	4	5	..	..	..	1	2	3	1	2	3	4	5	6	7	
2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14
9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21
16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28
23	24	25	26	27	28	29	27	28	29	30	..	..	..	25	26	27	28	29	30	31	29	30	31	..	..	..	..
30	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
September							October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	1	2	3	4	..	..	..	..	1	2	..	1	2	3	4	5	6	..	..	..	1	2	3	4	
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13	5	6	7	8	9	10	11
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25
26	27	28	29	30	..	..	24	25	26	27	28	29	30	28	29	30	..	..	..	..	26	27	28	29	30	31	..
..	..	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

1921.

January							February							March							April							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
						1	..	..	1	2	3	4	5		1	2	3	4	5							1	2
2	3	4	5	6	7	8	6	7	8	9	10	11	12	6	7	8	9	10	11	12		3	4	5	6	7	8	9
9	10	11	12	13	14	15	13	14	15	16	17	18	19	13	14	15	16	17	18	19	10	11	12	13	14	15	16	
16	17	18	19	20	21	22	20	21	22	23	24	25	26	20	21	22	23	24	25	26	17	18	19	20	21	22	23	
23	24	25	26	27	28	29	27	28	..	..	..	..	..	27	28	29	30	31	..	..	24	25	26	27	28	29	30
30	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
May							June							July							August							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
1	2	3	4	5	6	7	..	..	..	1	2	3	4	..	..	..	..	1	2		..	1	2	3	4	5	6
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13	
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20	
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27	
29	30	31	..	..	..	..	26	27	28	29	30	..	..	24	25	26	27	28	29	30	28	29	30	31	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..

COLLEGE CALENDAR—1919-1920-1921

1919.

September 15, 16.... Monday and Tuesday, Entrance Examinations.
 September 17..... Wednesday, 11 A. M., College Year begins.
 September 17..... Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 27..... Thanksgiving Day. Holiday.
 December 8 Monday, 1.30 P. M., Mid-Winter Meeting of
 Board of Trustees in Harrisburg.
 December 23 Tuesday, 1 P. M. Christmas Recess begins.

1920.

January 6..... Tuesday, 8 A. M., Christmas Recess ends.
 February 22..... Washington's Birthday. Holiday.
 April 1..... Thursday, 1 P. M., Easter Recess begins.
 April 7..... Wednesday, 8 A. M., Easter Recess ends.
 April 7..... Founders' Day.
 May 18 Tuesday, Latin Examination for Hassler Prize.
 May 24 to 28 Monday to Friday, Senior Final Examinations.
 May 30..... Decoration Day. Holiday.
 May 29 to June 7. Saturday to Monday, General Final Examinations.
 June 6..... Sunday, 10.45 A. M., Baccalaureate Sermon.
 June 6..... Sunday, 7 P. M., Discourse before Y. M. C. A.
 June 7..... Monday, 8 P. M., Concert by Combined Musical Clubs in Brua Chapel.
 June 7, 8..... Monday and Tuesday, Entrance Examinations.
 June 8..... Tuesday, 9 A. M., Annual Meeting of Board of Trustees in Gettysburg.
 June 8..... Tuesday, 10 A. M., Senior Class Day Exercises.
 June 8..... Tuesday, 3 P. M., Alumni Class Reunions.
 June 8..... Tuesday, 4 P. M., Baseball Game on Nixon Field.
 June 9..... Wednesday, 10 A. M., Commencement Exercises.
 June 9..... Wednesday, Noon, Alumni Collation.

Summer Vacation.

August 24..... Tuesday, 8 A. M., Course in Surveying Begins.
 September 13, 14.... Monday and Tuesday, Entrance Examinations.
 September 15..... Wednesday, 11 A. M., College Year begins.
 September 15 Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 25..... Thanksgiving Day. Holiday.
 December 6..... Monday, 1.30 P. M., Mid-Winter Meeting of
 Board of Trustees in Harrisburg.
 December 22..... Wednesday, 5 P. M., Christmas Recess begins.

1921.

January 5 Wednesday, 8 A. M., Christmas Recess ends.
 January 24 to 29 . Monday to Saturday, Examinations closing
 First Semester.
 January 29..... Saturday, 1 P. M., First Semester ends and
 Second Semester begins.
 March 24..... Thursday, 1 P. M., Easter Recess begins.
 March 30..... Wednesday, 8 A. M., Easter Recess ends.
 June 8..... Wednesday, Commencement.

HISTORICAL.

The Charter of Pennsylvania College was approved April 7, 1832. The opening paragraphs are as follows:

"WHEREAS, the literary and scientific institution in Gettysburg, Adams County, in this Commonwealth, known by the name of Gettysburg Gymnasium, is resorted to by a large number of young men from different portions of this State, and elsewhere, and promises to exert a salutary influence in advancing the cause of liberal education; therefore,

"SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, That the Gettysburg Gymnasium be, and hereby is erected into a College, for the education of youth in the learned languages, the arts, sciences and useful literature.

"SECTION 2. And be it further enacted by the authority aforesaid, That the style and title of said College shall be 'Pennsylvania College of Gettysburg' and that it shall be under the management, direction and government of all the subscribers to the funds of said institution, by whose private contributions the said funds have been raised and its present edifice purchased, to wit: John B. McPherson, Thomas C. Miller, Thomas J. Cooper, Samuel Fahnestock, Samuel S. Schmucker, Ernest L. Hazelius, David F. Schaeffer, John G. Morris, Benjamin Kurtz, William Heim, Charles P. Krauth, Frederick D. Schaeffer, J. George Schmucker, J. F. Heyer, Jacob Martin, Abraham Reck, William Ernst, Jacob Medtard, Lewis Eichelberger, Michael Meyerheffer, Jonathan Ruthrauff, Jacob Crigler, John F. Macfarlane, Robert Goodloe

Harper, John Herbst, and their successors, to be elected as hereinafter mentioned."

In SECTION 4 we read: "And at elections either for patrons, or trustees, or teachers, or other officers, and in the reception of pupils, no person shall be rejected on account of his conscientious persuasion in matters of religion, provided he shall demean himself in a sober manner, and conform to the rules and regulations of the College."

The College in a large measure grew out of the necessity of properly preparing men for the Theological Seminary, established in 1826 at Gettysburg. This purpose has never lessened, and to-day the institution regards this is an important feature of its work and offers special opportunities to young men preparing themselves for theological studies. Pennsylvania College in its beginnings and its history is closely identified with the Lutheran Church.

Among the founders of the College special mention should be made of S. S. Schmucker, D.D., Professor in the Theological Seminary at Gettysburg, who was the directing spirit in changing the Gettysburg Gymnasium into a College and who presided unofficially over the College for two years. In the State Legislature were a number of friends of the College, prominent among them being Thaddeus Stevens, the father of the public school system of Pennsylvania. Several appropriations were made to the College by the Legislature. This money was spent in the erection of the building known as Pennsylvania Hall.

The College began without endowment, with one small building (now a residence on the south-east corner of Washington and High streets), and a small attendance. But the wholesome enthusiasm of its able instructors, the loyalty and self-sacrifice of its officers, students, and

alumni, and the devotion of its friends, have made its history down to the very present one of steady and continuous growth. To-day Pennsylvania College is rated as a college of the highest grade by the United States Bureau of Education and the New York State Board of Regents. Her graduates are admitted to all graduate and professional schools without examination.

Following is a list of the Presidents of the College from its foundation to the present time:

1832-34, Samuel S. Schmucker, D.D., Founder.

1834-50, Charles Philip Krauth, D.D., First President.

1850-68, Henry L. Baugher, D.D., Second President.

1868-84, Milton Valentine, D.D., LL.D., Third President.

1884-1904, Harvey W. McKnight, D.D., LL.D., Fourth President.

1904-10, Samuel G. Hefelbower, Ph.D., D.D., Fifth President.

1910-, William A. Granville, Ph.D., LL.D., Sixth President.

LOCATION.

Gettysburg is situated in the beautiful rolling area of the red shale belt of Pennsylvania, with its ridges of intrusive rock. A few miles west is the South Mountain ridge of the Blue Mountains. The situation is healthful, and there is a good supply of filtered water. The town is readily reached from all directions by the Philadelphia & Reading and the Western Maryland Railways, which connect at Harrisburg, Pa., and Baltimore, Md., with the great railway systems of Pennsylvania and the South. Washington, Baltimore, Harrisburg, York, Hagerstown, Chambersburg, Carlisle, and other important centers are also connected with Gettysburg by unusually good roads, making it a very important automobile tourist center. The Coast to Coast Lincoln Way passes through Gettysburg.

The historic association of Gettysburg with the Civil War gives the locality great additional interest. The events of the Battle of Gettysburg are recorded in inscriptions on about fourteen hundred monuments and one thousand markers, many of these being of large size and of great artistic merit. The United States Battlefield Commission has made the field accessible by over forty miles of very fine avenues, along which are the markings that show the battle lines. Miles of the rifle pits and other intrenchments have been preserved, as well as scores of lunettes. Here also is the National Cemetery where Lincoln made his memorable dedicatory speech. Among the thousands of travelers visiting the field are many men of national prominence who often speak to the student body. Such surroundings develop a love of our united country and inspire to better citizenship.

The college buildings were all used as hospitals during and after the Battle of Gettysburg; and the Fiftieth Anniversary of the Battle of Gettysburg Commission had its headquarters on the campus, July 1-4, 1913.

BOARD OF TRUSTEES.

Elected.

1890.	HON. SAMUEL McC. SWOPE*.....	Gettysburg
1890.	WILLIAM H. DUNBAR, D.D.*.....	Baltimore, Md.
1892.	THOMAS C. BILLHEIMER, D.D.*.....	Gettysburg
1893.	JOHN WAGNER, D.D.*.....	Hazleton
1896.	JOHN B. McPHERSON, ESQ.....	Boston, Mass.
1897.	WILLIAM A. SHIPMAN, D.D.*.....	Johnstown
1898.	HENRY C. PICKING.....	Gettysburg
1899.	CHARLES F. STIFEL.....	Pittsburgh
1899.	HENRY H. WEBER, D.D.....	York
1902.	CHARLES BAUM, M.D., Ph.D.....	Philadelphia
1906.	SAMUEL G. HEFELBOWER, Ph.D., D.D....	Topeka, Kan.
1907.	MARTIN H. BUEHLER.....	Baltimore, Md.
1907.	HON R. WILLIAM BREAM.....	Gettysburg
1907.	FREDERICK H. BLOOMHARDT, M.D.....	Altoona
1907.	ALPHEUS EDWIN WAGNER, D.D.....	Gettysburg
1908.	WILLIAM J. GIES, Ph.D., Sc.D.*.....	New York, N. Y.
1908.	WILLIAM L. GLATFELTER.....	Spring Grove
1908.	FRANK E. COLVIN, ESQ.....	Bedford
1908.	JOHN F. DAPP.....	Harrisburg
1908.	GEORGE B. KUNKEL, M.D.....	Harrisburg
1908.	JACOB A. CLUTZ, D.D.....	Gettysburg
1910.	WILLIAM A. GRANVILLE, Ph.D., LL.D.....	Gettysburg
1910.	CHARLES J. FITE.....	Pittsburgh
1910.	BURTON F. BLOUGH.....	Harrisburg
1912.	CHARLES H. BOYER.....	Chicago, Ill.
1913.	HON. LUTHER A. BREWER.....	Cedar Rapids, Ia.
1914.	FREDERICK H. KNUBEL, D.D.....	New York, N. Y.
1914.	PERCEY D. HOOVER, M.D.....	Waynesboro
1915.	LESLIE M. KAUFFMAN, M.D.....	Kauffman's
1915.	HARVEY C. MILLER.....	Philadelphia
1916.	JOHN B. McALISTER, M.D.....	Harrisburg
1916.	MARION J. KLINE, D.D.....	Altoona
1917.	JEREMIAH ZIMMERMAN, D.D., LL.D.,...	Syracuse, N. Y.
1918.	LOUIS S. WEAVER, M.D.....	York
1919.	E. CLARENCE MILLER	Philadelphia

Officers.

JOHN F. DAPP.....	President
HON. SAMUEL McC. SWOPE.....	Vice President
HENRY C. PICKING.....	Secretary and Treasurer

*Designated as Alumni Trustees, having been elected on nomination by the Alumni Association.

STANDING COMMITTEES OF THE BOARD.

Executive Committee.

	Term Expires
MARTIN H. BUEHLER, Chairman	1920
THOMAS C. BILLHEIMER, D.D.....	1924
HENRY C. PICKING.....	1923
JACOB A. CLUTZ, D.D.....	1922
WILLIAM L. GLATFELTER.....	1921
JOHN F. DAPP	Ex-officio
WILLIAM A. GRANVILLE, Ph.D., LL.D.....	Ex-officio

Finance Committee.

HON. SAMUEL McC. SWOPE, Chairman
 THOMAS C. BILLHEIMER, D.D.
 HENRY C. PICKING
 HON. R. WILLIAM BREM
 WILLIAM A. GRANVILLE, Ph.D., LL.D

Committee on Honorary Degrees.

WILLIAM A. GRANVILLE, Ph.D., LL.D., Chairman
 WILLIAM H. DUNBAR, D.D.
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 JOHN WAGNER, D.D.
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 ALPHEUS E. WAGNER, D.D.
 BURTON F. BLOUGH
 JOHN F. DAPP, Ex-officio

College Infirmary Committee.

GEORGE B. KUNKEL, M.D., Chairman
 CHARLES BAUM, M.D., Ph.D.
 FREDERICK H. BLOOMHARDT, M.D.

Committee on Charter.

FREDERICK H. KNUBEL, D.D., Chairman
 JOHN B. McPHERSON, ESQ.
 WILLIAM J. GIES, Ph.D., Sc.D.

THE FACULTY.

WILLIAM ANTHONY GRANVILLE, Ph.D. (Yale),
LL.D. (Lafayette)
President

3 Campus

REV. PHILIP MELANCHTHON BIKLE, Ph.D. (Roanoke),
D.D. (Dickinson)
Dean and Pearson Professor of Latin
145 Lincoln Ave.

EDWARD SWOYER BREIDENBAUGH, Sc.D. (Pennsylvania)
Ockershausen Professor of Chemistry and Mineralogy
227 Carlisle St.

GEORGE DIEHL STAHLEY, A.M., M.D. (Univ. of Pa.)
Dr. Charles H. Graff Professor of Biology and Hygiene
300 Carlisle St.

REV. CHARLES HENRY HUBER, Litt.D. (Pennsylvania)
Headmaster and Professor of Latin in Gettysburg Academy
411 Carlisle St.

KARL JOSEF GRIMM, Ph.D. (Johns Hopkins)
Professor of German
228 Carlisle St.

REV. CHARLES FINLEY SANDERS, D.D. (Lafayette)
William Bittinger Professor of Philosophy and Education
135 Broadway

LOUIS ALEXANDER PARSONS, Ph.D. (Johns Hopkins)
Professor of Physics
225 Lincoln Ave.

REV. MILTON H. VALENTINE, D.D. (Pennsylvania)

Amanda Rupert Strong Professor of English Bible and Professor
of History

143 Springs Ave.

SIVERT NIELSEN HAGEN, Ph.D. (Johns Hopkins)

Graeff Professor of English

29 Stevens St.

JOHN KENYON LAMOND, Ph.D. (Yale)

Alumni Professor of Mathematics

(On leave of absence in Red Cross work)

ALBERT BILLHEIMER, Ph.D. (Princeton)

Franklin Professor of Greek

417 W. Middle St.

FRANK H. CLUTZ, Ph.D. (Johns Hopkins)

Burton F. Blough Professor of Civil Engineering

159 Broadway

JAMES REES EWING, Ph.D. (Johns Hopkins)

Professor of Economics and Political Science

Middle St.

RUDOLPH ROSENSTENGEL, M.M.E., (Cornell)

Professor of Electrical and Mechanical Engineering

113 Broadway

EUGENE MONELL BAXTER, A.M. (Aix), Ph.D., LL.D.

(Franklin)

Professor of Romance Languages

20 E. Middle St.

NOAH BRYAN ROSENBERGER, A.M. (Univ. of Pa.)

Acting Professor of Mathematics

143 Springs Ave.

CAPTAIN SHELBY MASON TUTTLE, Infantry, U. S. A.

Professor of Military Science and Tactics and Commander Re-
serve Officers' Training Corps (R. O. T. C.)

117 Carlisle St.

PENNSYLVANIA COLLEGE

CLYDE BELL STOVER, A.M. (Pennsylvania)

Assistant Professor of Chemistry

24 E. Lincoln St.

CHARLES PAUL CESSNA, A.M. (Pennsylvania)

Assistant Professor of Physics

218 Baltimore St.

JAMES ALLEN DICKSON, A.M. (Pennsylvania)

Instructor in Chemistry

263 Springs Ave.

GRANT C. KNIGHT, A.B.

Instructor in English and Public Speaking

Carlisle St.

BRUCE LEVI CHRIST, B.S.

Assistant in Chemistry

211 P.

GEORGE REICH MILLER, B.S.

Assistant in Physics

245 McK.

ALEXANDER O. POTTER, A.B.

Assistant in Political Science and Master in French in Gettysburg
Academy

Water St.

HENRY WOLF BIKLE, A.M., LL.B. (Univ. of Pa.)

Lecturer on Constitutional Law

Philadelphia

THOMAS NIXON CARVER, Ph.D., LL.D.

Stuckenberg Lecturer on Sociology

Cambridge, Mass.

DOYLE REVERE LEATHERS, B.S.

Senior Master and Instructor in Mathematics in Gettysburg
Academy

Room 314 G. A.

MARTIN LUTHER FAUST, A.B.

Master in Latin and History in Gettysburg Academy
Room 317 G. A.

WILLIAM THOMAS SIEBER, A.B.

Master in English and History in Gettysburg Academy
Room 306 G. A.

PERRY D. SCHWARTZ

Student Assistant in Mathematics
Room 203 P.

ADDITIONAL OFFICERS AND EMPLOYEES.

EDWARD SWOYER BREIDENBAUGH, Sc.D.

Curator of Museum
227 Carlisle St.

KARL JOSEF GRIMM, Ph.D.

Librarian
228 Carlisle St.

REV. MILTON H. VALENTINE, D.D.

Chaplain
143 Springs Ave.

REV. SAMUEL FRANKLIN SNYDER, A.M.

Assistant to the President
Stevens St.

HENRY C. PICKING, A.M.

Treasurer
Office, 16 Center Square

CLYDE B. STOVER, A.M.

Registrar and Secretary of the Faculty
24 E. Lincoln St.

DOYLE REVERE LEATHERS, B.S.

Athletic Director
Room 314 G. A.

PENNSYLVANIA COLLEGE

MISS SALLIE P. KRAUTH
Assistant Librarian

3 Baltimore St.

MISS MARY HAY HIMES, A.M.
Assistant Librarian

130 Carlisle St.

MISS RACHEL GRANVILLE
Secretary to the President

3 Campus

FIRST SERGEANT RICHARD J. RYAN, Infantry, U. S. A.
Assistant in Military Science and Tactics

31 Washington St.

FIRST SERGEANT CHARLES A. DUKE, Infantry, U. S. A.
Assistant in Military Science and Tactics

31 Washington St.

BRUCE LEVI CHRIST
Chief Proctor, Pennsylvania Hall

Room 211 P.

AUSTIN H. FELLENBAUM
Proctor in McKnight Hall

Room 337 McK.

GLENN T. HAFER
Assistant Proctor in Pennsylvania Hall

Room 421 P.

CARLYSLE P. BELKNAP
Proctor in Cottage Hall

Room 260 C.

LEVI D. GRESH
Custodian of Reading Room

Room 419 P.

EUGENE MERLE GILLETTE

Assistant to Registrar

Room 358 C.

JOHN B. HAMILTON

Superintendent of Buildings and Grounds

128 Washinton St.

HOMER R. BUOHL

Engineer

Water St.

Fireman

EDWARD BARBEHENN

218 N. Stratton St.

ANDREW C. CASTLE

Watchman

239 Chambersburg St.

MRS. EMMA BELLE NOLL

Stewardess in Gettysburg Academy

Room 106 G. A.

S. FRANKLIN WETZEL

Engineer in Gettysburg Academy

48 Stevens St

MRS. S. FRANKLIN WETZEL

Matron in Gettysburg Academy

48 Stevens St.

JOSEPH CARVER

Janitor

4 Campus

MERVE CARVER

Janitor

4 Campus

MRS. M. S. YOHE

Janitress

207 Chambersburg St.

COMMITTEES OF FACULTY.**Class Advisers.**

PROFESSOR STAHLEY, Senior Class
PROFESSOR SANDERS, Junior Class
PROFESSOR PARSONS, Sophomore Class
PROFESSOR BREIDENBAUGH, Freshman Class

Entrance.

GRIMM, BIKLE, CLUTZ, STOVER, ROSENBERGER

Library.

GRIMM, GRANVILLE

Bulletin.

HAGEN, PARSONS, EWING, BAXTER
GRANVILLE, Ex-officio

Hour Schedule.

BREIDENBAUGH, GRIMM

Students' Publications.

SANDERS, HAGEN, VALENTINE

Supervision of Finance of Student Organizations.

EWING, SANDERS, STAHLEY

College Discipline.

SANDERS, BIKLE, STAHLEY, VALENTINE, PARSONS

Lectures.

BIKLE, EWING, ROSENSTENGEL

Advanced Degrees.

GRIMM, BIKLE, STAHLEY

Representative on Athletic Council.

VALENTINE

Supervision of Social Functions.

BILLHEIMER, BIKLE

Student Employment.

GRANVILLE, SNYDER

Student Organizations.

BREIDENBAUGH, ROSENSTENGEL, BAXTER

Dormitory Rooms.

PARSONS, PICKING, STOVER, SNYDER

Supervision of Musical Clubs.

CLUTZ

Electric Service.

ROSENSTENGEL

ATHLETIC COUNCIL.

MILTON H. VALENTINE

Faculty Representative, President

DOYLE REVERE LEATHERS, '13

Athletic Director, Vice-President

SAMUEL F. SNYDER, '09

Graduate Athletic Manager, Secretary

ARTHUR E. RICE, '04

Alumni Representative, Treasurer

PENNSYLVANIA COLLEGE

GEORGE W. NICELY, '01

Alumni Representative

E. E. ZIEGLER, '21

Student Representative

S. D. EBERLY, '20

Ex-officio, President of the College Athletic Association

JOHN F. DAPP, ex-'89

Ex-officio, President of the Board of Trustees

WILLIAM A. GRANVILLE

Ex-officio, President of the College

STUDENT COUNCIL 1919-20.

CLARENCE A. NEAL, '20

President

HAROLD M. GRIEST, '20

Vice-President

HARRY W. SLANKER, '20

Recording Secretary

JOHN R. HOUSER, '21

Corresponding Secretary

SAMUEL S. SHAULIS, '21

Treasurer

WALTER H. HILL, '23

Messenger

DWIGHT F. PUTNAM, '20

PAUL I. REDCAY, '21

JOHN BRENNEMAN, '22

JAMES W. KYLE, Jr., '22

ADMISSION.

Applicants for admission are required to present evidence of a good moral character. Students coming from other schools must present certificates of good standing and regular dismissal from the institutions which they have left. No distinctions are made as to sex, except that only male students are admitted to the college dormitories. Women students may secure first-class accommodations in the town with good families and at very reasonable rates by writing to the Registrar.

METHOD OF ADMISSION.

The method of admission is either by examinations or by certificates from approved secondary and high schools or from private instructors. Such certificates should state the amount of work done and the time spent on each subject, together with the grades received. *The official forms for certificates*, which may be had on application to the Registrar, *should be used in all cases*, in order to insure the presentation of the necessary information for the Entrance Committee which passes on all applications for admission. These certificates should be filled out and returned to the Registrar as early as possible before the opening of the college year. Entrance examinations are held on the Monday and Tuesday preceding the opening of the college year and on the Monday and Tuesday of Commencement Week.

REGISTRATION.

Every student who desires to register at Pennsylvania College should call on the Registrar before or at the opening of College, pay the Registration Fee of \$5.00, be informed as to the action of the Entrance Committee, re-

ceive registration blanks, and be instructed in the manner of filling them out. He should arrange his course of study under the guidance of his Group Adviser. He should also submit his schedule of studies, properly endorsed by the Group Adviser, to the Registrar within one week from the opening of College.

REQUIREMENTS FOR ADMISSION.

The scholarship requirement for admission to the Freshman Class is thoro preparation in fifteen units of work in an approved secondary school. A *unit* of work in any subject is the amount of work that may be done in a standard secondary school in a year of thirty-six weeks, with five recitation periods of forty-five minutes each, per week.

PRESCRIBED SUBJECTS FOR ADMISSION.

Of these fifteen units required for admission, the following *five and a half* are required of all candidates:

English	3* units
Mathematics	
A. Algebra	1½ units
B. Plane Geometry	1 unit

ELECTIVE SUBJECTS FOR ADMISSION.

To make up the total of fifteen units the candidate for admission may offer any of the following (under the conditions stated in connection with each Group of College studies, pages 32-58):

Greek.

A. Grammar and four books of Xenophon.....	2 units
B. Composition, three books of Homer, and sight translation	1 unit.

* As the first English work in the high school or preparatory school course is largely grammar, the credit granted in English is one unit less than the number of years of work in this subject.

Latin.

- A. Grammar and four books of Caesar2 units.
- B. Composition and six books of Cicero1 unit.
- C. Six books of Vergil1 unit.

German.

- One to three years1 to 3 units.

French.

- One to three years1 to 3 units.

Spanish.

- One to three years1 to 3 units.

Mathematics.

- C. Solid Geometry $\frac{1}{2}$ unit.
- D. Plane Trigonometry $\frac{1}{2}$ unit.

Mechanical Drawing.

- One year $\frac{1}{2}$ or 1 unit.

History.

- United States $\frac{1}{2}$ or 1 unit.
- England $\frac{1}{2}$ or 1 unit.
- Ancient $\frac{1}{2}$ or 1 unit.
- Medieval $\frac{1}{2}$ or 1 unit.

Geography, Political and Physical $\frac{1}{2}$ or 1 unit.**Chemistry.**

- One year with laboratory work1 unit
- One year without laboratory work $\frac{1}{2}$ unit.

Physics.

- One year with laboratory work1 unit.
- One year without laboratory work $\frac{1}{2}$ unit.

Botany.

- One year with laboratory work1 unit.
- One year without laboratory work $\frac{1}{2}$ unit.

Zoölogy.

- One year with laboratory work1 unit.
- One year without laboratory work $\frac{1}{2}$ unit.

Single units will be accepted in French, Spanish, or German to make up the total Modern Language entrance requirements for admission to any Group.

ADDITIONAL SUBJECTS.

Certificates will be accepted in Civics, Astronomy, Geology and General Science; also in Commercial Geography and Bookkeeping when offered for admission to the Commerce-Finance Group; also in Manual Training and Shop Work (to count not more than half a unit in each case) when offered for admission to any of the Engineering Groups.

DEFICIENCY IN ADMISSION.

To receive the full advantage of a college course a student must have a thoro entrance preparation. Those who are insufficiently prepared for the class they enter do not generally make satisfactory progress in their work. Fifteen units of entrance work are required for unconditional admission to the College; but students who lack not more than two units of entrance requirements of any group may register as conditioned freshmen. In such cases the entrance deficiency must be satisfied by enrollment in the Gettysburg Academy or under an approved tutor. Such enrollment must take place at the time of registration in the College. Work thus done in satisfying an entrance deficiency does not give College credit, but does count as part of the current work of the student in estimating the number of hours in which he may be enrolled.

ADMISSION TO ADVANCED STANDING.

A candidate for advanced standing must satisfy the entrance requirements and in addition must submit evidence of the satisfactory character of the work for which advanced credit is asked.

No one is admitted to the College after the beginning of the Senior year except by special action of the Faculty.

PARTIAL COURSE STUDENTS.

Persons so situated that they are not able or do not wish to pursue a course of study leading to a degree, are admitted as partial course students in such subjects as examination may show they are prepared to pursue with advantage. Such students are required to offer for entrance not less than eleven units of preparatory work, and their weekly schedule must include not less than fourteen semester hours.

SPECIAL STUDENTS.

Students of the Theological Seminary are admitted to one or more courses in the College.

The Faculty may also admit to one or more courses such applicants as have special qualifications for the subjects they desire to pursue.

HONOR SYSTEM IN EXAMINATIONS.

Every student entering College must sign a statement in the Registrar's office expressly accepting this Honor System. Failing to do so he will be suspended until this requirement is satisfied.

ADMISSION SUBJECTS IN DETAIL.

ENGLISH.

In English the study of the following books, recommended by the National Conference on Uniform Entrance Requirements. This is required for 1920-1921.

A. Reasonable familiarity with the substance of the work:

The following are preferred, tho any of the alternatives specified in the Uniform Entrance Requirements for 1919-1922 are accepted:

Shakespeare's "Merchant of Venice" and "Julius Caesar"; Addison's "Sir Roger de Coverley Papers"; Goldsmith's "Deserted Village"; Scott's "Ivanhoe" and "Lady of the Lake"; George Eliot's "Silas Marner"; Irving's "Sketch Book"; Tennyson's "Gareth and Lynette," "Lancelot and Elaine," and "Passing of Arthur"; Ruskin's "Sesame and Lilies."

B. More careful and specific study:

Shakespeare's "Macbeth"; Milton's "Lycidas"; "Comus," "L'Allegro," and "Il Penseroso"; Washington's "Farewell Address"; Webster's "First Bunker Hill Oration"; Carlyle's "Essay on Burns."

The examination will be in two parts,—one of questions on grammar, rhetoric, and composition, the other of questions on the literature specified above.

In the first part, candidates will be asked specific questions and given particular exercises in word-choice, sentence structure, the principles of paragraphing, and other such matters as a student seeking college standing should be proficient in. The examination in literature will require reasonable familiarity with the books and the authors mentioned under "A" above (or those accepted in

substitution for them', and fairly thoro knowledge and appreciation of the books and the authors named under "B" above.

No candidate will be accepted in English whose work is seriously defective in spelling, punctuation, grammar, choice of words, sentence structure, paragraphing, or other essentials of good usage.

MATHEMATICS.

A. Algebra. The four fundamental operations for rational algebraic expressions; factoring, determination of highest common factor and least common multiple by factoring; fractions, involution, evolution, radicals, and imaginary quantities. Equations of the first and second degree, ratio and proportion, progressions; binominal theorem for positive integral exponents, and permutations and combinations limited to simple cases.

B. Plane Geometry. Five Books. Demonstration of theorems and constructions, including rectilinear figures, circles, proportional lines, and similar figures; comparison and measurement of surfaces, including triangles, regular polygons, and circles; maxima and minima; originals.

C, D. The entrance requirements in Solid Geometry and Plane Trigonometry are similar to the work done in these subjects in the College course as given on page 84. For advanced standing in Solid Geometry and Trigonometry, candidates must present note-books and other evidence of thoro work.

POLITICAL AND PHYSICAL GEOGRAPHY.

The requirements in Political Geography may be met by the study of any good text-book. The requirement in Physical Geography may be met by the study of any text-book equivalent to Gilbert and Bringham's "Introduction

to Physical Geography," Davis' "Elementary Physical Geography," or Tarr's "New Physical Geography."

GREEK.

A1. Grammar. The candidate must have familiarized himself with the essentials of grammar, namely, the inflections of substantives and verbs; the syntax of cases, and the moods and tenses of the verb; the simple rules for the composition and derivation of words; the structure of sentences, with particular regard to conditional and relative sentences, indirect discourse, and final clauses.

A2. Xenophon. The first four books of "Anabasis."

B1. Prose Composition. The requirements in prose composition involve the ability to translate into idiomatic Greek, continuous narrative based on Xenophon's "Anabasis," Book II, and other Attic prose of similar difficulty. Due regard must be paid to the principles and practice of accentuation.

B2. Homer. The first three books of the "Iliad" (omitting II, 494-end) or the "Odyssey," including the Homeric forms, constructions, and prosody.

B3. Sight Translation. One of the most important assets which a student can bring to the study of college Greek is the ability to read easily at sight passages of equal difficulty with the "Anabasis" or the "Hellenica." For this purpose he should memorize as a working vocabulary the principal words in Xenophon and the three books of Homer.

(See pages 62-63 for Beginners' Greek in College).

LATIN.

A1. Grammar. Allen and Grenough's preferred.

A2. Caesar's "Gallic War," Books I-IV.

B1. Prose Composition, including the translation of English passages on Caesar and Cicero.

B2. Six Orations of Cicero, including at least two against Catiline, the one for Archias, and the one for the Manilian Law.

C. Vergil's "Aeneid," Books I-IV, and so much prosody as relates to Latin versification in general and the dactylic hexameter in particular.

Equivalents will be accepted for work done in Sallust or Ovid or other authors of equal rank.

GERMAN.

The requirements in German presuppose a systematic course extending over at least two years of school work.

The candidate is expected to be able to pronounce German clearly and distinctly. He must possess an accurate knowledge of the rudiments of grammar, and should have acquired an elementary German vocabulary. He should be able to translate easy prose and poetry, and to put into German simple English sentences taken from the language of every-day life and easy selections from English narrative prose.

FRENCH.

The requirements in French correspond to those in German, and include the ability to pronounce French accurately, to read easy French prose, to put into French simple English sentences taken from the language of every-day life and easy selections from English narrative prose, and a good knowledge of the rudiments of French grammar.

SPANISH.

The requirements in Spanish correspond to those in French.

MECHANICAL DRAWING.

Drawings, accompanied by a certificate from the instructor, must be submitted. One unit credit will be allowed in cases where not less than two hundred hours of work has been devoted to the subject.

HISTORY.

A. *United States.* Montgomery's "Leading Facts of American History," or its equivalent.

B. *English.* Walker's "Essentials of English History," or its equivalent.

C. *Ancient.* Myers' "Ancient History," or its equivalent.

D. *Medieval and Modern.* Myers' "Medieval and Modern History," or its equivalent.

CHEMISTRY.

The candidate should have such knowledge of the general principles of the science and the properties of the more important elements as may be obtained by a careful study of a text-book of the scope of Remsen's "Introduction to the Study of Chemistry, Briefer Course."

The pupil should have performed in the laboratory experiments in number and general character the equivalent of those given in Remsen's "Introduction." The record of this work must be contained in a note-book describing in the pupil's own words the materials used, the apparatus employed (with drawings), the changes occurring, and the resulting products, with the conclusions properly drawn from the phenomena observed.

This note-book must be presented bearing the following endorsement by the instructor: "This note-book is a true and original record of experiments actually performed by — in — school during the year —."

PHYSICS.

A good high school course, using any standard high school text, covering the simple principles of Physics, descriptive and experimental rather than mathematical, including not less than three class periods and two hours of laboratory work a week for one year.

BOTANY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to text-book and laboratory study of this subject with the aid of Bergen's "Essentials of Botany" or some other standard book of equal merit. Drawings and note-books are required.

ZOÖLOGY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to this subject. Davidson's "Practical Zoölogy" or any other standard book of equal grade will be accepted. Note-books and drawings must accompany the certificate.

THE GROUP SYSTEM OF COURSES.

The courses of study in the College are arranged in ten groups. These groups are designed to be of equal value in the mental training of the student. This arrangement accomplishes several purposes. It enables the student to select those subjects which are of special value in preparation for subsequent professional study or business. In the first six groups it provides for a general training and broad culture which requires the student not to specialize but to concentrate a fair proportion of his time and energy on one or two related subjects. This gives a fuller training of the mental powers than results from a more diffused and often aimless selection of studies in a too largely elective system.

In addition to these groups of non-professional courses, groups have been established in Civil, Municipal, Mechanical, and Electrical Engineering.

The groups of studies are described in detail on pages 32 to 58 with entrance requirements for each.

VALUE OF A SEMESTER HOUR OF COLLEGE WORK.

A semester hour of college work consists of the equivalent of one weekly exercise for one semester, either a recitation, a lecture, a laboratory period of two and a half or three hours, or an assignment of equivalent work on which an examination is held. A weekly exercise for one semester consisting of one lecture hour in connection with two laboratory hours, counts as one semester hour.

OUTLINE OF GROUPS

GROUP I.—GREEK AND LATIN.

Group Adviser: Professor Biklé.

Entrance Requirements: English, 3 units; Mathematics, A, B, 2½ units; Latin A, B, C, 4 units; Greek A, B, 3 units, or 3 units of Modern Languages; and 2½ elective units.

This Group is especially recommended for its cultural value and as a preliminary training course for those intending to enter the ministerial, legal, medical, journalistic, or teaching profession, and also provides a foundation for advanced language study.

This Group leads to the degree of **Bachelor of Arts**.

The following Schedule of Studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek*: Cebes, Lucian	1*	3	2*	3	62
or Greek*: First Year Greek	A*	3	A*	3	62
Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3	64
English: English Composition	A	3	A	3	59
History: Political History of Modern Europe	I	2	I	2	73
English Bible: General Introduction	I	1	I	1	72
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	I	3	1, 2	3	88
Chemistry: General Chemistry	I	3	I	3	86
Military Science: (Optional)	I	1	2	1	106
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Total Semester Hours	18-19		18-19		

* Students offering a Modern Language for admission will take Greek A, and those offering Greek for admission will take Greek 1 and 2.

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek*: Plato (Apology and Crito), Greek History (or Greek 6)	3*	3	4*	3	62, 63
or Greek*: Second Year Greek	B*	3	B*	3	62
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3	64
English: English and American Literature	1	2	1	2	59
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2	74
Military Science: (Optional)	3	1	4	1	107
Electives:		6		6	
Total Semester Hours	16-17		16-17		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Greek*: Cebes, Lucian	1†	3	2†	3	62
English: Shakespeare	2	2	2	2	59
Economics: Principles of Economics	1	3	1	3	78
Christian Evidences:	1	2			73
Philosophy: Logic	3	2			74
Philosophy: Ethics			5	2	75
Physics: General Physics	1	3	1	3	90
and Physics‡: Laboratory Physics	2	1	2	1	90
Elective: Military Science	5	4	6	4	107
Electives:		5		7	
Total Semester Hours	16-20		16-20		

* Students offering Modern Language for admission will take Greek B, and those offering Greek for admission will take Greek 3 and 4.

† Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

‡ In some cases Physics 1 may be taken without Physics 2 (if approved by the Group Adviser and Instructor).

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Greek*: Plato (Apology and Crito), Greek History (or Greek 6)	3*	3	4*	3	62
Philosophy: History of Philosophy	6	3	6	3	75
Philosophy: Theism			8	2	76
Electives:	9-15		7-13		
It is suggested that these be chosen from the following:					
Latin: Terence, Latin Literature, Roman Law	9, 10	2	10, 11	2	65, 66
Greek: Euripides,	7	2			63
Modern Language:	2 or 3	2 or 3			60-67
English: Public Speaking	5	2	5	2	60
History: English History, United States History	2	3	3	3	73
Education: History of Education, Pedagogy	1	3	2	3	77
Education: School Organization and Method of Teaching	3	2			77
Comparative Philology:	1	1	1	1	71
Biology: Personal and Public Hygiene	9	1	9	1	85
Physics: Mechanics, Electricity and Light	3, 4	4	3, 4	4	90
Military Science:	7	4	8	4	108
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Total Semester hours	16-20		16-20		

*Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

GROUP II.—LATIN AND MODERN LANGUAGES.**Group Adviser:** Professor Grimm.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; Latin A, B, C, 4 units; 2 units of Modern Languages or Greek; History, 1 unit; and $2\frac{1}{2}$ elective units.

This Group is recommended for its cultural value and is further well adapted to preparation for the legal or teaching professions or for literary pursuits. The emphasis is laid on Latin and the Modern Languages, and provision is made for those who wish to make a special study of them.

This Group leads to the degree of **Bachelor of Arts**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the Course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Livy, Horace (Odes), Cicero (De Senectute)	I, 2	3	2, 3	3	64
Modern Language:		3		3	60-67
English: English Composition	A	3	A	3	59
History: Political History of Modern Europe	I	2	I	2	73
English Bible: General Introduction	I	1	I	1	72
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	I	3	2	3	88
Biology: General Biology, Zoölogy	I, 2	3	2, 3	3	83
or Chemistry: General Chemistry,	I	3	I	3	86
or Physics: General Physics	I	3	I	3	90
and Physics*: Laboratory Physics	2*	1	2*	1	90
Military Science: (Optional)	I	1	2	1	106
Total Semester Hours	18-20		18-20		

* In some cases Physics 1 may be taken without Physics 2 (if approved by the Group Adviser and Instructor).

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3	64
Modern Language:	*	3	*	3	60-67
English: English and American Literature	1	2	1	2	59
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2	74
Military Science: (Optional)	3	1	4	1	107
Elective: Modern Language (advised)		6		6	60-67
Total Semester Hours	16-17		16-17		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Languages:		6		6	60-67
English: Shakespeare	2	2	2	2	59
English: English Novel or Anglo-Saxon	3, 4	2	3, 4	2	59
Economics: Principles of Economics	1	3	1	3	78
Christian Evidences:	1	2			73
Philosophy: Ethics			5	2	75
Elective: Military Science	5	4	6	4	107
Electives:		1-4		1-4	
Total Semester Hours	16-20		16-20		

* The Modern Language chosen in the Freshman Year must be continued.

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Modern Languages:		6		6	60-67
Electives:		10		10	
Military Science:	7	4	8	4	108
Those looking toward teaching are advised to elect:					
Education: History of Education, Pedagogy	1	3	2	3	77
Education: School Organization and Method of Teaching	3	2			77
Philosophy: Logic	3	2			74
<hr/>					
Total Semester Hours		16-20		16-20	

GROUP III.—HISTORY AND POLITICAL SCIENCE.**Group Adviser:** Professor Valentine.

Entrance Requirements: English, 3 units; Mathematics, A, B, 2½ units; Latin A, B, C, 4 units; 2 units of Modern Languages or Greek; History, 2 units; and 1½ elective units.

In this Group emphasis is laid on the historical studies and on Political Science and Economics. The Group is intended to lay the foundations for professional legal studies and to prepare for the teaching of these subjects.

This Group leads to the degree of **Bachelor of Arts.**

The following schedule of studies gives for each subject the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3	64
Modern Language:		3		3	60-67
English: English Composition	A	3	A	3	59
History: Political History of Modern Europe	1	3	1	1	73
English Bible: General Introduction			1	2	72
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	1	3	2	3	88
Biology: General Biology, Zoology,	1, 2	3	2, 3	3	83
or Chemistry: General Chemistry,	1	3	1	3	86
or Physics: General Physics	1	3	1	3	90
and Physics*: Laboratory Physics	2*	1	2*	1	90
Military Science: (Optional)	1	1	2	1	106

Total Semester Hours**18-19****18-19**

* In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

GROUP THREE

39

Sophomore Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3 3	5, 6	3 3	64 60-67
Modern Language:					
English: English and American Literature	1	2	1	2	59
American Government: Political Science	1	3	2	3	81
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2	74
Military Science: (Optional)	3	1	4	1	107
Electives:		3		3	
Total Semester Hours	16-17		16-17		

Junior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
English: Shakespeare	2	2	2	2	59
Economics: Principles of Economics	1	3	1	3	78
Economics: Labor Problems, Business Organization	7†	3	8†	3	80
or Political Science*: Comparative Government, Constitutional Law	3†	3	4†	3	82
History‡: English History	2	3	2	3	
or History†: United States History	3†	3	3†	3	74
Christian Evidences:	1	2			73
Philosophy: Ethics			5	2	75
Elective: Military Science	5	4	6	4	107
Electives:		3-6		3-6	
Total Semester Hours	16-19		16-19		

† Given 1920-1921 and alternate years.
‡ Given 1919-1920 and alternate years.

Senior Year.

	First Semester.		Second Semester.		
	Course Number	Hours Credit	Course Number	Hours Credit	Page
Economics†: Labor Problems, Business Organization	7†	3	8†	3	80
or Political Science†: Comparative Government	3	3			82
History*: English History	2*	3	2*	3	73
or History†: United States History	3†	3	3†	3	73
Philosophy: Sociology	4	2			75
Electives:	8-II		8-II		
It is suggested that the electives in the Junior and Senior Years be taken from the following:					
Latin: Roman Law	1	1			66
Economics: Money and Banking, Business Law	2*	3	5	3	78
Economics: Public Finance	3	3			79
Philosophy: Epistemology	9	1			76
Modern Language:	1 or 1½		1 or 1½		60-67
Military Science:	7	4	8	4	108
Total Semester Hours	16-19		16-19		

* Given 1919-1920 and alternate years.

† Given 1920-1921 and alternate years.

GROUP IV.—CHEMISTRY AND PHYSICS.**Group Advisers:**

Chemistry Section: Professor Breidenbaugh.

Physics Section: Professor Parsons.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; 4 units from this list: Latin, French, German, and Spanish; and sufficient electives to make a total of 15 units.

In this Group the emphasis is laid on Chemistry and Physics with the requirement that special attention be given to one of these subjects in the Junior and Senior Years. The Group is intended to prepare for teaching these subjects, or for professional studies in these lines or for advanced work in research laboratories in the field of Chemistry and Physics (both scientific and technical), or for manufacturing and commercial pursuits.

Either the Chemistry or Physics section should be selected on entering the Group; however, the choice between Chemistry and Physics as the principal subject is not required to be made until the beginning of the Junior Year.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:	*	3	*	3	60-67
Latin: Livy, Horace (Odes), Cicero (De Senectute),	1, 2	3	2, 3	3	64
or Modern Language:		3		3	
English: English Composition	A	3	A	3	59
History: Political History of Modern Europe	I	2	I	2	73
English Bible: General Introduction	I	1	I	1	72
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	I	3	2	3	88
Chemistry: General Chemistry	I	3	I	3	86
Military Science: (Optional)	I	1	2	1	106
Total Semester Hours		18-19		18-19	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:		3		3	60-67
English: English and American Literature	1	2	1	2	59
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2	74
Mathematics: Advanced Algebra, Plane and Solid Analytic Geometry†	3	3			88
Elementary Analysis‡			4	4	88
Chemistry: Qualitative Analysis	2	3	5	3	88
Physics: General Physics	1	3	2	3	86
Physics: Laboratory Physics	2	1	1	3	90
Military Science: (Optional)	2	1	2	1	90
	3	1	4	1	107
Total Semester Hours		17-18		17-19	

* The language chosen in the Freshman Year must be continued for one more year.

† For Chemistry Section.

‡ For Physics Section.

Junior Year (Chemistry Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	59
Economics: Principles of Economics	1	3	1	3	78
Christian Evidences:	1	2			73
Philosophy: Ethics			5	2	75
Chemistry: Quantitative Analysis	3	3	3	3	86
Physics: Mechanics, Electricity and Magnetism, and Light	3	3	3	3	90
Physics: Physical Measurements	4	1	4	1	91
Elective: Military Science	5	4	6	4	107
Electives:		2-5		2-5	
Total Semester Hours	16-19		16-19		

Senior Year (Chemistry Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Chemistry: Organic Chemistry A	4	3			86
Chemistry: Organic Chemistry B	4	6			86
Chemistry: Industrial Chemistry			8	3	87
Chemistry: Special Quantitative Methods			7	6-8	87
Electives:		7-9		7-9	87
Military Science:	7	4	8	4	108
Students intending to engage in Chemical work or in teaching Chemistry are advised to elect from the following list:					
Geology and Mineralogy: Dynamical and Historical Geology	1	2	2	2	87
Geology and Mineralogy: Mineralogy	3	2	3	2	87
French:		3		3	
German: Scientific German	3	3	3	3	61
Spanish: Elementary Spanish	1	3	1	3	59
Education:		3		3	77
Total Semester Hours	16-18		16-18		

Junior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	59
Economics: Principles of Economics	1	3	1	3	78
Christian Evidences:	1	2			73
Philosophy: Ethics			5	2	75
Mathematics: Differential and Integral Calculus	6	4	6	4	89
Physics: Mechanics, Electricity and Magnetism, and Light	3	3	3	3	90
Physics: Physical Measurements	4	1-2	4	1-2	91
Elective: Military Science	5	4	6	4	107
Electives:		0-4		0-4	
Total Semester Hours	16-19		16-19		

Senior Year (Physics Section).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Mathematics: Differential Equations	7	3			89
Physics: Physics Seminary	11	1	11	1	92
Physics: Advanced Laboratory Physics	10	2	10	2	91
Physics: Recent Advances in Physics,	7	1	7	1	91
Electives:		6-9		6-9	
Military Science:	7	4	8	4	108
To those intending to pursue advanced work in Physics it is suggested that electives be chosen from the following:					
Modern Languages:	5 or 8		5 or 8		60-67
Physics: Mathematical Physics	8 or 9	2	8 or 9	2	91
Geology and Mineralogy: Dynamical and Historical Geology	1	2	2	2	87
Biology: General Biology and Zoölogy	1, 2	3	2, 3	3	83
Total Semester Hours	16-19		16-19		

GROUP V.—BIOLOGY, CHEMISTRY, AND PHYSICS.

Group Adviser: Professor Stahley.

Entrance Requirements: English, 3 units;; Mathematics, A, B, 2½ units; 4 units from this list: Latin, French, German, Spanish; and sufficient electives to make a total of 15 units.

This Group offers advantages in supplying the essentials of a general science course, and in addition includes those special branches in pre-medical studies which will admit the graduate to any school of medicine he may desire to enter.

To meet the requirements of those medical schools that admit on two years of college work the following course is given:

First year,—German, Latin or French, English, Chemistry, Biology.

Second year,—German or French, English, Chemistry, Biology, Physics, Philosophy.

Members of this Group, by adding certain studies as electives in the Senior year in the Department of Philosophy, will completely meet the teaching requirements of the Pennsylvania School Code.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:		3		3	60-67
or Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	1, 2	3	64
English: English Composition	A	3	A	3	59
History: Political History of Modern Europe	I	2	I	2	73
English Bible: General Introduction	I	1	I	1	72
Mathematics: Plane Trigonometry, and Algebra, Advanced Algebra	I	3	2	3	88
Chemistry: General Chemistry	I	3	I	3	86
Military Science: (Optional)	I	1	2	1	106
Total Semester Hours	18-19		18-19		

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:		3		3	60-67
English: English and American Literature	1	2	1	2	59
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2	74
Mathematics: Advanced Algebra, Elementary Analysis	3	3	5	3	88
Chemistry: Qualitative Analysis	2	3	2	3	86
Physics: General Physics	1	3	1	3	90
Physics: Laboratory Physics	2	1	2	1	90
Military Science: (Optional)	3	1	4	1	107
Total Semester Hours	17-18		18-19		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: Shakespeare	2	2	2	2	59
Christian Evidences:	1	2			73
Philosophy: Ethics			5	2	75
Biology: General Biology, Zo- ölogy	1, 2	4	2, 3	4	83
Biology: Botany	7	2	7	2	84
Chemistry: Quantitative Analysis	3	3	3	3	86
Physics: Mechanics, Electricity and Magnetism, and Light	3	3	3	3	90
Physics: Physical Measure- ments	4	1	4	1	91
Elective: Military Science	5	4	6	4	107
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Total Semester Hours		17-19		17-19	

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics: Principles of Economics	1	3	1	3	78
Biology: Human Anatomy and Physiology, Mammalian Histology, Embryology	4	3	5, 6	3	83
Chemistry: Organic Chemistry A	4	3			86
Chemistry: Organic Chemistry C	4	3	4	3	87
Electives:		5-8		5-8	
Military Science:	7	4	8	4	108
Those looking forward to teaching are advised to elect:					
German: Scientific German	3	3	3	3	61
Philosophy: Logic	3	2			75
Education: History of Education, Pedagogy	1	3	2	3	77
Education: School Organization and Method of Teaching	3	2			77
Biology: Personal and Public Hygiene	9	1	9	1	85
Those looking forward to Medicine are advised to elect:					
Political Science: Comparative Government, American Government	3	3	2	3	82
French:		2 or 3		2 or 3	67
or German:	1	3	2	3	60
Biology: Personal and Public Hygiene	9	1	9	1	85
Geology: Dynamical and Historical Geology	1	2	2	2	87
Physics: Recent Advances in Physics	7	2	7	2	91
In addition to the above lists, the following are suggested for general culture:					
History: English History	2	3	2	3	70
Total Semester Hours	16-18		16-18		

GROUP VI.—COMMERCE AND FINANCE.**Group Adviser: Professor Ewing.**

Entrance Requirements: English, 3 units; Mathematics, A, B, 2½ units; History, 2 units; 4 units from this list: Latin, French, German, Spanish; and sufficient electives to make a total of 15 units.

This Group is designed primarily for students who intend to enter business, law or the public service. Especial attention is given to the general principles underlying all lines of business, and to the relation of business to government and politics.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:		3	3		60-67
English: English Composition	A	3	A	3	59
History: Political History of Modern Europe	I	2	I	2	73
English Bible: General Introduction	I	1	I	1	72
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	I	3	2	3	88
Biology: General Biology, Zoölogy,	I, 2	3	2, 3	3	83
or Chemistry: General Chemistry,	I	3	I	3	86
or Physics: General Physics	I	3	I	3	90
and Physics*: Laboratory Physics	2*	1	2*	1	90
Military Science: (Optional)	I	1	2	1	106
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Total Semester Hours		18-20		18-20	

* In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:					60-67
English: English and American Literature	I	2	I	2	59
Philosophy: Psychology, Introduction to Philosophy	I	2	2	2	74
Economics: Principles of Economics	I	3	1	3	78
Political Science: Principles of Political Science, American Government and Politics	I	3	2	3	81
Economics: Accounting	6A	3	6A	3	79
Military Science: (Optional)	3	1	4	1	107
Total Semester Hours	16-17		16-17		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:					3 60-67
English: Shakespeare	2	2	2	2	59
History†: English History,	2†	3	2†	3	73
or History‡: United States History	3	3	3	3	73
Economics†: Money and Banking, Business Law,	2†	3	5†	3	78
or Economics‡: Public Finance, Accounting	3†	3	6B†	3	79
or Economics†: Railway Transportation, Rural Economics	9†	3	10†	3	80
Economics‡: Labor Problems, Business Organization,	7‡	3	8‡	3	80
or Economics: Scientific Management, Industrial Organization			11	3	80
			12	3	81
or Political Science†: International Law, Constitutional Law	5†	3	4†	3	82
or Political Science†: Comparative Government, Conservation of National Resources	3†	3	6†	3	82
or Political Science: Municipal Government	7	3			
Christian Evidences:	1	2			73
Philosophy: Ethics			5	2	75
Elective: Military Science	5	4	6	4	107
Total Semester Hours	16-18		15-18		

* The Modern Language chosen in the Freshman year must be continued.

† Given 1919-1920 and alternate years.

‡ Given 1920-1921 and alternate years.

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics* : Money and Banking, Business Law,	2*	3	5*	3	78, 79
or Economics* : Public Finance, Accounting	3*	3	6B*	3	79
or Economics* : Railway Transportation, Rural Economics	9	3	10	3	80
Economics† : Labor Problems, Business Organization,	7†	3	8†	3	80
or Economics : Scientific Management, Industrial Organization			11	3	80
			12	3	81
or Political Science* : International Law, Constitutional Law	5*	3	4*	3	82
or Political Science* : Comparative Government, Conservation of Natural Resources	3	3	6	3	82
or Political Science : Municipal Government	7	3			82
Philosophy† : Sociology	4†	2			75
Electives :		8-10		10-12	75
Elective : Military Science	7	4	8	4	108
Total Semester Hours		16-18		16-18	.

* Given 1919-1920 and alternate years.

† Given 1918-1919.

GROUP VII.—CIVIL ENGINEERING.

GROUP VIII.—MUNICIPAL (SANITARY) ENGINEERING.

Group Adviser: Professor Clutz.

Entrance Requirements: English, 3 units; Mathematics A, B, and D, 3 units; 2 units of Modern Languages; and sufficient electives to make a total of 15 units.

This Group affords suitable training not only for students who expect to enter this profession, but for those who wish to prepare themselves for callings more or less closely related to engineering. During the first two years emphasis is laid on the underlying natural sciences and on mathematics, while during the last two years technical subjects are introduced. Some liberal arts studies are required, and extreme specialization in instruction is avoided.

This Group leads to the degree of **Bachelor of Science**.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:		3		3	60-67
or Latin: Livy, Horace,	1, 2	3	2, 3	3	64
English: English Composition.	A	3	A	3	59
Mathematics: Advanced Algebra	3	3			88
Mathematics: Plane Analytic Geometry			4	4	88
Chemistry: General Chemistry	1	3	1	3	86
Physics: General Physics	1	3	1	3	90
Physics: Laboratory Physics	2	1	2	1	90
Engineering: Mechanical Drawing	1	1	1	1	94
Engineering: General Engineering.	8	1			
Surveying			12	2	96
Military Science: (Optional)	1	1	2	1	106
Total Semester Hours		18-19		20-21	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	59
Mathematics: Differential and Integral Calculus	6	4	6	4	89
Physics: Mechanics, Electricity and Magnetism, and Light	3	3	3	3	90
Physics: Physical Measurements	4	1	4	1	91
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	94
Engineering: Mechanics	3	5	3	5	94
Military Science: (Optional)	3	1	4	1	107
Total Semester Hours	18-19		17-18		

Summer Field Surveying.

Civil Engineering 11.—Surveying (A), Field Work. Three weeks (145 hours) in August and September between Sophomore and Junior Years. Credit of two semester hours. (See page 91).

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	73
English Bible: General Introduction	1	1	1	1	72
Philosophy: Psychology, Ethics	1	2	5	2	74, 75
Geology and Mineralogy: Mineralogy	3	2	3	2	87
Engineering: Hydraulics*			5	3	95
Engineering: Materials Testing	6	4	6	3	95
Engineering: Elements of Electrical Engineering	7	3	7	3	95
Civil Engineering: Structural Design (A) and (B)	18	2	19	2	98
Civil Engineering: Railroads (A)	16	4			97
Civil Engineering: Sewerage*			4	2	99
Water Supply*	24	2			99
Masonry*	22	3			98
Highways*			23	2	98
Contracts and Specifications*			21	2	98
Military Science: (Optional)	5	4	6	4	107
Total Semester Hours	19-20		17-19		

*As offered.

Summer Field Surveying.

Civil Engineering 13.—Surveying (B), Field Work. Three weeks (145 hours) in August and September between Junior and Senior Years. Credit of two semester hours. (See page 96).

Senior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics*: Principles of Economics	1	3	1	3	78
Christian Evidences:	1	2			73
English: English Novel and Short Story	3	2	3	2	59
Geology and Mineralogy: Dynamical Geology	1	2			87
Civil Engineering: Surveying (B), Astronomy and Geodesy	14	3			97
Civil Engineering: Railroads (B)			17	2	97
Civil Engineering: Structural Design, (B) and (C)	19	3	28	3	97
Civil Engineering: Structural Drafting			20	2	98
Civil Engineering: Contracts† and Specifications			21	2	98
Civil Engineering† Masonry	22	3			98
Civil Engineering: Highways†			23	2	98
Civil Engineering: Seminary	26	1	26	1	99
Civil Engineering: Sewerage†			25	2	99
Military Science: (Optional)	7	4	8	4	108
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Total Semester Hours		18-20		20-22	

Senior Group VIII.

Work in Sanitation and City Planning is substituted for Railroads and Structural Drafting in the second semester.

* Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

†As offered.

GROUP IX.—MECHANICAL ENGINEERING.**GROUP X.—ELECTRICAL ENGINEERING.**

Group Adviser: Professor Rosenstengel.

Entrance Requirements: English, 3 units; Mathematics A, B, and D, 3 units; 2 units of Modern Languages; and sufficient electives to make a total of 15 units.

This Group is designed for students who wish to prepare themselves for work along engineering and manufacturing lines. The Group combines the study of the basic principles of engineering and, to a limited extent, their application to practical problems, with some work in the liberal arts. The instruction is of a broad and fundamental nature, and will be found useful to students who are desirous of fitting themselves for future promotion to executive positions in manufacturing and industrial concerns.

This Group leads to the degree of **Bachelor of Science.**

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, the page of this Bulletin where the course is described, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Modern Language:		3		3	60-67
or Latin: Livy, . . . Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3	64
English: English Composition,	A	3	A	3	59
Mathematics: Advanced Algebra	3	3			88
Mathematics: Plane Analytic Geometry			4	4	88
Chemistry: General Chemistry	1	3	1	3	86
Physics: General Physics	1	3	1	3	90
Physics: Laboratory Physics	2	1	2	1	90
Engineering: Mechanical Drawing	1	1	1	1	94
Engineering: General Engineering, Surveying	8	1	2	2	96
Military Science: (Optional)	1	1	2	1	106
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Total Semester Hours		18-19		20-21	

Sophomore Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
English: English and American Literature	1	2	1	2	59
Mathematics: Differential and Integral Calculus	6	4	6	4	89
Physics: Mechanics, Electricity and Magnetism, and Light	3	3	3	3	90
Physics: Physical Measurements	4	1	4	1	91
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2	94
Engineering: Mechanics	3	5	3	5	94
Military Science: (Optional)	3	1	4	1	107
Total Semester Hours	18-19		17-18		

Junior Year.

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
History: Political History of Modern Europe	1	2	1	2	73
English Bible: General Introduction	1	1	1	1	72
Philosophy: Psychology, Ethics	1	2	5	2	74, 75
Engineering: Hydraulics			5	3	95
Engineering: Materials Testing	6	4	6	1	95
Engineering: Elements of Electrical Engineering	7	3	7	3	95
Mechanical Engineering: Shop Work	31	2	32	2	99
Mechanical Engineering: Kinematics	33	4			99
Mechanical Engineering: Machine Design (A)			34	3	100
Mechanical Engineering: Heat Power Engineering (A)	36	3	36	3	100
Military Science: (Optional)	5	4	6	4	107
Total Semester Hours	20-24		20-24		

Senior Year (Group IX).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics*: Principles of Economics	I	3	I	3	78
Christian Evidences:	I	2			73
English: English Novel and Short Story	3	2	3	2	59
Mechanical Engineering: Machine Design (B)	35	3	35	3	100
Mechanical Engineering: Heat Power Engineering (B)	37	3	37	3	100
Mechanical Engineering: Power Plant Design			38	3	101
Mechanical Engineering: Mechanical Engineering Laboratory	39	I	39	I	101
Civil Engineering: Structural Design (A) and (B)	18	2	19	2	97
Mechanical Engineering: Seminary			40	I	101
Military Science: (Optional)	7	4	8	4	108
Total Semester Hours	16-20		18-22		

* Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

Senior Year (Group X).

	First Semester.		Second Semester.		Page
	Course Number	Hours Credit	Course Number	Hours Credit	
Economics*: Principles of Economics	1	3	1	3	78
Christian Evidences:	1	2			73
Electrical Engineering: Telephone			49	2	102
English: English Novel and Short Story	3	2	3	2	59
Mechanical Engineering: Mechanical Engineering Laboratory	39	1	39	1	101
Electrical Engineering: Theory of Electrical Machinery	45	5	45	2	101
Electrical Engineering: Characteristics of Electrical Machinery	46	1	46	3	102
Electrical Engineering: Electrical Laboratory	47	2	47	2	102
Mechanical Engineering: Heat Power Engineering (B)	37	3			100
Electrical Engineering: Seminary			48	1	102
Military Science: (Optional)	7	4	8	4	108
Total Semester Hours	19-23		16-20		

*Or other courses in economics aggregating six semester hours selected with the approval of the Department of Economics.

COURSES OF INSTRUCTION.

ENGLISH.

Professor Hagen and Mr. Knight.

A. English Composition.—This course consists of practice in writing exposition, argument, description, and narration, in long and short themes, and in letters; with the parallel study of specimens, and of the principles of rhetoric as they apply to writing. Lectures, recitations, written exercises in the class-room and outside, and personal conferences.

Required course for all Freshmen. Three periods thruout the year. Credit of six semester hours.

1. English and American Literature.—This course consists of a survey of English Literature from "Bewoulf" to Kipling, and of the chief American writers; lectures, collateral reading, and written reports.

Required course for all Sophomores. Two periods thruout the year. Credit of four semester hours.

2. Shakespeare.—This course embraces the careful study of half a dozen of the plays, with the more rapid reading of others, selected and arranged so as to give the student an insight into the development of Shakespeare's mind and art.

Required course for all Juniors in Groups I-VI. Two periods thruout the year. Credit of four semester hours.

3. English Novel and Short Story.—First two-thirds of the year, a survey of the growth of the novel in structure and content; last third of year, a study of the principles and structure of the short story. Lectures, collateral reading of representative novels and short stories, class discussions, weekly reports, and personal conferences.

Required course for Juniors in Groups II and VI, and all Seniors in Groups VII-X; open to all other Juniors as an elective course. Two periods thruout the year. Credit of four semester hours.

4.—Anglo Saxon.—An introductory course including the study of the elementary principles of the grammar and the reading of representative selections from Anglo-Saxon literature.

Elective for Juniors and Seniors. May be substituted by Juniors and Seniors in Groups II and VI for Course 3. Two periods thruout the year. Credit of four semester hours.

5. Public Speaking and Oral Reading.—This course consists of practice in prepared and extempore speaking, in oral reading of prose and poetry, and in general platform work.

Elective course open to all qualified students. Two periods thruout the year. Credit of four semester hours.

6. Argumentation and Debating.—A study of the substance and the forms of argumentative discourse, written and spoken; involving the principles of inductive and deductive logic, of sound and fallacious reasoning, of evidence, of the selection and use of materials, and of the best forensic and platform practice.

Elective course open to members of class and college debating teams; and to qualified Juniors and Seniors. Two periods thruout the year. Credit of four semester hours.

GERMAN.

Professor Grimm.

German A.—An elementary course. It includes the study of grammar, practice in reading, writing and speaking German; translation of prose and poetry, and the memorizing of simple poems.

Three periods thruout the year. Credit of six semester hours.

German 1.—For students who have presented German for admission; also for those who have completed German A. This course comprises a brief review of grammar, combined with oral and written composition, exercises in conversation, and readings, both with previous preparation and at sight, from standard writers of modern German prose. Some time is also given to ballads and lyrics. Outside reading may be assigned.

Three periods thruout the year. Credit of six semester hours.

German 2.—For students who have passed in German 1. This course is devoted to the study of selections from classical authors, chiefly from Goethe and Schiller. Private reading is required.

Two or three periods thruout the year. Credit of four or six semester hours.

German 3a.—For candidates for the degree of Bachelor of Science, also open to others who satisfy the instructor of their fitness to take it. This course consists of the cursory reading in class of German essays of a general scientific character, together with private assignments on some special subject in Science.

Two or three periods thruout the year. Credit of four or six semester hours.

German 3b.—An advanced course in Scientific German.

Hours and credit to be arranged.

German 4.—For those students who have chosen German as their principal subject in Group II; open also to others who satisfy the instructor of their fitness to take it. The work of this course includes the study of the main epochs of the German language and literature, on the basis of readings from representative German authors.

Two or three periods thruout the year. Credit of four or six semester hours.

German 5.—An elective course on German literature in the period of the Reformation, with special reference to Luther and the church hymns. Open to advanced students in German.

Hours and credit to be arranged.

German 6.—An elective course devoted to the discussion of grammatical topics, advanced composition, and the critical reading of selected texts, and intended for those students who wish to teach German.

Hours and credit to be arranged.

German 7.—A course aiming to widen the student's vocabulary of modern German by means of extracts from newspapers, periodicals, and other suitable reading. As far as practicable, the course will be conducted in German.

Hours and credit to be arranged.

Deutscher Verein.—Opportunity for more extended German conversation and study may be offered to advanced students in a voluntary German Club, meeting fortnightly from November to April inclusive.

GREEK.

Professor Billheimer.

Preparatory Greek.

A. First Year Greek.—An elementary course for students who have not presented Greek for admission. The course will cover White's "First Greek Book."

Three periods thruout the year. Credit of six semester hours.

B. Second Year Greek.—A course for those who have taken First Year Greek. Books I-IV of Xenophon's "Anabasis" and Books IX-XIII of the Odyssey" will be read.

Three periods thruout the year. Credit of six semester hours.

1. Cebes.—The "Tablet" will be studied, with a thoro review of forms and the essentials of syntax. Greek Prose Composition.

Freshman course. Three periods, first semester. Credit of three semester hours.

2. Lucian.—The longer selections will be read by the class as a whole, while the shorter dialogues will be assigned to individuals. Lectures on the life and times of Lucian.

Freshman course. Three periods, second semester. Credit of three semester hours.

3. Plato.—"Apology," and "Crito." Individual reports will be made on the life and work of Socrates.

Sophomore course. Three periods, first semester. Credit of three semester hours.

4. Greek History.—A survey of the history of Greece from the earliest times to the death of Alexander the Great. The study of the history of this period will be accompanied by an examination of the early archaeological remains and by the reading of selections from the literary and epi-

graphical sources. Reports on special subjects will be made by members of the class.

Sophomore course. Three periods, second semester. Credit of three semester hours.

- 5. Demosthenes.**—The "First Philippic" and the "Olynthiacs." Oxford text. The students prepare grammatical and historical notes for each oration.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. (Given in 1919-1920.)

- 6. New Testament Study.**—This course embraces a study of New Testament Greek. Some book of the New Testament is read in the original. The study of Biblical Greek has its approach from the classic side, but special attention is given to the distinctive peculiarities of Hellenistic Greek as a later and less artificial dialect of the elaborate and polished language of orators and philosophers. The student is familiarized with the vocabulary of the New Testament. Etymology and syntax are systematically studied.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. (Given in 1919-1920.)

- 7. Euripides.**—This course will give a practical introduction to Greek metrics, and will include the history of Greek Tragedy and of the Greek Theatre.

Junior and Senior course. Two periods, first semester. Credit of two semester hours. (To be offered in 1920-1921.)

Special Arrangements for Beginning Greek in College.

To provide for applicants for Group I who cannot offer the entrance requirements in Greek, but can offer three entrance units in Modern Languages instead, provision is made for beginning Greek in College. Such students take Preparatory Greek Courses A and B during Freshman and Sophomore years, and receive College credit for same.

A student who is a regular member of Group II will be allowed to elect courses in Greek, including Courses A and B, after the Sophomore year, and will be given College credit for them.

LATIN.

Professor Biklé.

Allen and Greenough's "Latin Grammar" and Harper's "Latin Lexicon" are recommended. Of the smaller dictionaries the student is advised to get the "Elementary Latin Dictionary," by Charlton T. Lewis.

1. **Livy.**—Selections from Book I, and the Hannibalian War in Books XXI and XXII. Special attention is given the syntax and Livy's peculiarities of style. Collateral reading on the Punic Wars, and lectures on Rome and Carthage.

Freshman course. Three periods during the first semester up to the Christmas vacation. Credit of two semester hours.

2. **Horace.**—Selections from the "Odes," including a critical interpretation with special attention to the Horatian meters and the mythological and historical allusions of the text. Berens' "Hand-Book of Mythology" is recommended. Collateral reading on Horace as a lyric poet.

Freshman course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

3. **Cicero.**—The "De Senectute" will be read, with thoro drill in syntax, special attention being given to the mode uses of the Latin Subjunctive.

Freshman course. Three periods from the last of March to the close of the academic year. Credit of two semester hours.

Note. During part of the Freshman year there will be, in connection with the reading of the Latin text, drill in Latin Prose Composition, embracing a rapid review of Latin syntax, with oral and written practice in the principles involved.

4. **Cicero.**—The "De Amicitia" or the "De Natura Deorum." Rigid drill in syntax will be continued, with training in reading the Latin text with expression. Collateral reading of the

life and times of Cicero. Informal lectures on Cicero's philosophical views.

Sophomore course. Three periods a week during the first semester up to the Christmas vacation. Credit of two semester hours.

5. **Horace.**—"Satires," and the "De Arte Poetica." After the study of some selected satires the "Ars Poetica" is read, and each student is required to prepare a written analysis of the poem. There is a review of the dactylic hexameter versification.

Sophomore course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

6. **Tacitus.**—The "Agricola," or selections from the "Annals." Along with the translation of the text there will be a study of the times in relation to the literature of this period, and special attention will be given to the characteristics of the Silver Age Latinity.

Sophomore course. Three periods from the last of March to the close of the year. Credit of two semester hours.

7. **Quintilian.**—Tenth Book of the "Institutes." The student is required to make a close study of the terms used by Quintilian in literary criticism, and to make a summary and classification of the Greek and Roman authors.

Junior course. Two periods during the first semester to the Christmas vacation. With course 8, credit of four semester hours.

8. **Juvenal.**—Selected Satires. With full explanations of the text and collateral reading on the private and social life of the Romans of the Empire. Followed by a short course in Roman Antiquities.

Junior course. Two periods from the beginning of January to the close of the college year. With course 7, credit of four semester hours.

9. **Terence or Plautus.**—The "Andria" of Terence or the "Captivi" of Plautus. The dramatis personae are assigned to special members of the class and the parts are rendered both in Latin and English. Informal lectures on the Roman theatre; also on the origin and development of the Latin

drama, and the value of the Roman comedy to the philologist and the student of Roman life.

Senior course. Two periods for ten weeks. With courses 10 or 11, and 12 or 13, credit of four semester hours.

10. Latin Literature.—A course of lectures embracing a general survey of the whole field, and aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, with special attention to the writers of the Golden and Silver Ages. Or, —

11. Roman History.—A course of lectures covering the period from 150 B. C. to 100 A. D.

Senior course. Two periods for eight weeks. With courses 9 and 12, credit of four semester hours.

12. Roman Law.—Morey's "Outlines" is the chief text-book. After a careful study of the historical development and content of Roman Law, a paper is required from each member of the class on a subject assigned for special investigation. Or, —

13. Roman Constitutional History.—The subject is pursued with the aid of a text-book.

Senior course. Two periods for seventeen weeks. With courses 9 and 10, or 11, credit of four semester hours.

ROMANCE LANGUAGES.

Professor Baxter and Mr. Potter.

Students should not plan to begin the study of two Romance Languages at the same time.

Freshmen in Group II, and other students entering as Sophomores in Group II, who plan to major in the Romance Languages should arrange their other studies so that they may secure at least twenty-four semester hours in this department.

FRENCH.

French A.—Elementary Course. For beginners: includes enunciation, pronunciation, grammar, oral and written composition, oral and sight reading, and composition, stress being placed on oral class work. A modification of "The Direct Method" is followed. The phonic alphabet of "The Association Phonétique Internationale" is used and the fundamentals of grammar, written chiefly in French, are mastered. A very fair degree of fluency is acquired in the oral and written use of some 2,000 French words, besides a knowledge of the important idiomatic forms of the language.

Three periods thruout the year. Credit of six semester hours.

French 1.—Intermediate Course. Open to students who have completed French A or its equivalent.

Students prepared elsewhere whose training shows marked defects in pronunciation, oral reading and oral composition will also be required to take the first semester's work in French A to remove these defects.

The course makes use of a comprehensive grammar in French, a text-book in rhetoric and composition in French; it requires a careful study of typical selections from authors of the present day in the fields of romance, history, the drama, science, sociology, commerce, philosophy and religion; it enables the student to read, write and converse in French with a great deal of ease.

Three periods thruout the year. Credit of six semester hours.

French 2.—Advanced Course. Open to students who have completed French 1 or its equivalent. The course offers a somewhat critical study of French literature in the latter half of the nineteenth century and the beginning of the twentieth, requiring oral and written reports and discussions in French on selections from a number of the leading authors of the period.

Two or three periods thruout the year. Credit of four or six semester hours.

French 3.—Literary Course, A. Open to Juniors and Seniors who have completed French 2 or its equivalent, and who, in

the opinion of the teacher, are otherwise qualified to pursue the course with profit. The course treats of the history of French literature in the fourteenth, fifteenth, and sixteenth centuries and requires the critical study of typical masterpieces of the period, with essays and critiques in French, and a great deal of sight reading and discussion.

Two or three periods thruout the year. Credit of four or six semester hours. (Offered in 1921-1922 and alternate years thereafter.)

French 4.—Literary Course, B. Open to students who have completed French 3. The course continues the work of French 3, into the seventeenth, eighteenth and nineteenth centuries and follows the same plan of study.

Two or three periods thruout the year. Credit of four or six semester hours. (Offered in 1920-1921 and alternate years thereafter.)

French 5.—Early Literature Course. Open to Juniors and Seniors who have completed French 3 or French 4. A survey is made of the origin and development of the French language, followed by a study of the "Chanson de Roland"; "Le Roman de la Rose"; "Le Mystère d'Adam"; and "Chroniques Francaises."

One or two periods thruout the year. Credit of two or four semester hours. (Offered in 1920-1921 and alternate years thereafter.)

French 6.—Commercial Course. Open to students who have completed French 2 or its equivalent. Offers a careful study of French business practice and correspondence, commercial composition and trade possibilities with France and her colonies.

Two or three periods thruout the year. Credit of four or six semester hours. (Offered in 1920-1921 and alternate years thereafter.)

French 7.—Scientific Course. Open to students who have completed French 2 or its equivalent. Treats of the formation of scientific words and terms, with peculiarities of

syntax and idiom; varied scientific reading; written reports and short articles on scientific topics.

Two or three periods thruout the year. Credit of four or six semester hours. (Offered in 1921-1922 and alternate years thereafter.)

French 8.—Oral Course. Open to Juniors and Seniors who have completed French 2 or its equivalent. Intended for prospective teachers and others who wish to acquire proficiency in spoken French. There will be discussions, debates, addresses, general conversation on given topics, monologues, dialogues and "readings."

Two or three periods thruout the year. Credit of four or six semester hours. (Offered in 1920-1921 and alternate years thereafter.)

SPANISH.

Spanish 1.—Elementary Course. For beginners: includes enunciation, pronunciation, grammar, oral and written composition, oral and written sight reading, and conversation. Emphasis is placed on oral class work. A modification of the "Direct Method" is followed. The fundamentals of grammar, written chiefly in Spanish, are mastered and a very fair degree of fluency is acquired in the oral and written use of about 2,000 Spanish words, besides a knowledge of many of the important idiomatic forms of the language.

Three periods thruout the year. Credit of six semester hours.

Spanish 2.—Advance Course. Open to students who have completed Spanish 1 or its equivalent. Students prepared elsewhere whose training shows serious defects in pronunciation, oral reading and oral composition, will also be required to take the first semester's work in Spanish 1 to remove such defects. The course requires the completion of a comprehensive grammar in Spanish; a text in rhetoric and composition; and a careful study of typical selections from modern authors, both Spanish and Latin-

American. Students acquire the ability to read, write and converse in Spanish with a good deal of fluency.

Two or three periods thruout the year. Credit of four or six semester hours.

Spanish 3.—Literary Course. Open to Juniors and Seniors who have completed Spanish 1 or its equivalent, and who, in the opinion of the teacher, are qualified to pursue the course with profit. A study is made of the development of the Castillian language, the history of Spanish literature, and of several of the masterpieces of the language. Essays are required, as well as criticisms, in Spanish, and sight reading and class discussion are features of the course.

One or two periods thruout the year. Credit of two or four semester hours. (Offered in 1921-1922 and alternate years thereafter.)

Spanish 4.—Commercial Course. Open to Sophomores, Juniors and Seniors who have completed Spanish 1 or its equivalent. Deals with Spanish commercial practice, correspondence and other commercial composition, and the trade possibilities with Spanish speaking countries.

One or two periods thruout the year. Credit of two or four semester hours. (Offered in 1920-1921 and alternate years thereafter.)

Spanish 5.—Oral Course. Open to upper classmen who have completed Spanish 1 or its equivalent. Intended for prospective teachers and others who desire to become more proficient in oral Spanish. Features of the course are discussions, debates, addreeses and conversation.

Two or three periods thruout the year. Credit of four or six semester hours. (Offered in 1920-1921 and alternate years thereafter.)

PORTUGUESE.

Portuguese 1.—Elementary Course. Open to students who have had two or more years of French or Spanish. Includes enunciation, pronunciation, grammar, oral and written

composition, oral reading and conversation. Oral class work is featured.

Offered the first semester only as a half course.

Portuguese 2.—Advanced Course. Open only to students who have completed Portuguese 1. The work is largely oral and includes Brazilian business practice, correspondence and other commercial composition and the possibilities of Brazilian industrial and trade development.

Students having a foundation of two years in French or Spanish will in a year's time gain a very good mastery of the Portuguese language.

Offered the second semester only as a half course.

Two or three periods thruout the year. Credit of four or six semester hours. (Offered in 1921-1922 alternate years thereafter.)

ITALIAN.

Italian 1.—Elementary Course. Open only to students who have completed at least two years of French or Spanish; includes enunciation, pronunciation, grammar, oral and written composition, oral and sight reading, conversation, and the study of modern prose and poetry.

Three periods thruout the year. Credit of six semester hours. (Offered in 1921-1922 and alternate years thereafter.)

Italian 2.—Advanced Course. Open only to students who have completed Italian 1. The novel and the drama will be studied during the first semester; in the second semester the work will deal with the classics and the history of the literature. There will be oral reports, essays and criticisms and a great deal of oral reading.

Three or four periods thruout the year. Credit of six or eight semester hours. (Offered in 1922-1923 and alternate years thereafter.)

COMPARATIVE PHILOLOGY.

Professor Grimm.

1. Linguistic Science.—A course open to advanced students, dealing with the principles of Linguistic Science.

One period thruout the year. Credit of two semester hours.

2. **Sanskrit.**—Beginners' course in Sanskrit. Open to Advanced students. This course includes the study of grammar and the interpretation of an easy text from Lanman's Reader. *Two periods thruout the year. Credit of four semester hours.*

ENGLISH BIBLE.

Professor Valentine.

1. **General Introduction to the English Bible.**—The progress of the revelation presented in the Scriptures is followed in its historical developments from the origins of the Hebrew people to the close of the Apostolic Age. In explaining the difference between the Hebrews and their neighbors the reasons are found not in their peculiar environment or exclusive racial characteristics, but, as the records themselves explain it, in terms of divine planning and a progressive human responsiveness. The message of the biblical writers is studied in its historical context so that its original significance may be understood as well as its meaning for the present.

Freshman course. Two periods, second semester. Credit of two semester hours.

2. **Literary Study of the Bible.**—The Bible is studied as a body of literature, and the sacred writings are subjected to a morphological analysis. The study of the literary forms is entirely independent of the historical investigation. The distinctive types of literary structure in the Bible as presented by Moulton in his "Modern Reader's Bible" are studied in detail and their permanent literary value is noted. The underlying principle of this study is that a thoro understanding of the outer literary form is an essential guide to an appreciation of the inner matter and spirit.

Sophomore course. One period thruout the year. Credit of two semester hours.

3. **New Testament Study.**—See Greek 6.

CHRISTIAN EVIDENCES.

Professor Valentine.

1. A constructive study of the evidences of the presence and action in the world of a supernatural redemptive power operating thru the Gospel, as these appear in the first Christian documents, in Christian history, and Christian experience, with the special aim of dealing with the perplexing questions which the mind encounters in the effort to intellectualize the content of the Christian revelation and state it in terms of modern knowledge and thought. The characteristic features of Christianity, the superhuman character of Christ, His unparalleled teachings, and His supernatural works as the normal expression of His supernatural person, are dwelt upon. The inductive method is followed. The Christian conclusion is shown to be the logical outcome of a study of the unique facts.

Junior course. Two periods, first semester. Credit of two semester hours.

HISTORY.

Professor Valentine.

1. **Political History of Modern Europe.**—The present conditions of Europe are explicable only in the light of preceding events. A new era was inaugurated by the political and industrial revolutions of the eighteenth century. With these as background the progress of the subsequent development is studied, with the special view of enabling the student to understand contemporary events and movements by thus connecting them with their proximate origins. As the development has been conspicuously social as well as political, social and political history are combined in one synthesis, and political and economic conditions are exhibited in their mutual reactions.

Freshman course. Three periods in first semester, one period in second semester. Credit of four semester hours.

2. **English History.**—After a rapid introductory survey of the Anglo-Saxon period, the course begins with the Norman conquest and deals with the details of historical development down to the present time. Stress is laid upon such

phases of English history as will specially aid the student to understand the modern political developments in the Anglo-Saxon world.

Junior and Senior course. Three periods each semester. Credit of six semester hours. Alternates with Course 3. Given 1919-1920 and alternate years.

Prerequisite, Course 1.

3. United States History.—This course comprises a study of our national history. An effort is made to discern the social and economic forces that have been operative in the development of the republic, and thus lead to an understanding of the national problems of the present.

Junior and Senior course. Three periods each semester. Credit of six semester hours. Alternates with Course 3. Given 1919-1920 and alternate years.

Prerequisite, Course 1.

PHILOSOPHY.

Professor Sanders.

1. Psychology.—A course in general psychology which aims to acquaint the student with the phenomena of mind, the methods of psychological investigation, and the practical bearing of the various mental functions on the problems of ethics, pedagogy, etc.

Sophomore course. Two periods, first semester. Credit of two semester hours.

2. Introduction to Philosophy.—The course in general psychology suggests the problems of philosophy. The course in Introduction aims to acquaint the student with the content of philosophy, the origin and development of the various problems, the aim and method of philosophy, the results which have been attained, and its relation to the other departments of human thought.

Sophomore course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

3. Logic.—An introductory course in the laws of thought. The evolution of the concept, its development into judgment and inference, the systematic function of classification,

the explanatory function of generalization, and the methodology of proof and investigation are studied with a view to securing a foundation for the theory of knowledge and effective scientific method.

Junior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

- 4. Sociology.**—A study of the nature of society and its problems. Starting with the psychological factors of sociation, the development of social institutions, the economic and cultural factors of social progress, and the elimination of hindrances, evils are taken up in turn with a view to an understanding of the methods of social improvement.

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

- 5. Ethics.**—A study of human conduct. The concept of personality and the idea of self-realization, as forming the background of moral judgment, are wrought into a system which explains the origin of the moral motives as well as their implication of God and immortality.

Junior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

6. History of Philosophy.

- A. Ancient and Medieval Period.**—This course traces the rise and progress of reflective thought as it appears among the Greeks and culminates in Scholasticism. Special stress is placed upon the Greek thinkers, with a view to acquiring an understanding of the spirit of philosophy.

Senior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3.

- B. Modern Period.**—This course covers the period from the Renaissance to the present time. Special stress is placed upon the great systems. The student is required to read selections from the great thinkers and report on them, the constant aim being to cultivate the philosophizing

attitude, thus furnishing a basis for independent thought as, well as an inspiration to do original thinking.

Senior course. Three periods, second semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, 3, and 6 A.

7. Philosophy of Religion.—A study of religion as a distinct factor in human development. The aim of the course is to show the nature of religion and to interpret the various forms in which it manifests itself.

Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

8 Metaphysics.—Beginning with the method of system building, the student is introduced to the meaning of a world-view, the factors which a comprehensive and consistent view must recognize, and the reasons for regarding Theism as the theory which best meets existing requirements.

Senior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, 3, 5, and 6.

9. Epistemology.—A study of epistemology investigating the principles of science with a view to understanding their origin, their validity, and their philosophical implications.

Senior course. Two periods, first semester. Credit of two semester hours. (Omitted 1919-1920.)

Prerequisite, Courses 1, 2, and 3.

10. Advanced Psychology.—A study of the problems and methods in modern psychology. The course is adapted to those who intend pursuing advanced studies in the mental sciences. Individual research work is required.

Senior course. Two periods, first semester. Credit of two semester hours. (Omitted 1919-1920.)

EDUCATION.

Professor Sanders.

- 1. History of Education A.**—A study of the most important movements in the history of education and of the factors and personages instrumental in bringing about the various steps in the long line of progress.

Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2. (Course A given in 1920-1921.)

History of Education B.—The development of Education in the United States furnishes the subject matter of this course. The interrelation between educational ideals and methods and the needs imposed by the development of colonial and national life and the more recent industrial development is followed very closely. The aim constantly kept in the foreground in these courses is to get a clear grasp of the ways in which the schools shape the destiny of civilization. Courses A and B are given in alternate years.

Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2. (Course B given in 1919-1920.)

- 2. Philosophy of Education.**—This course is an elaboration of the answer to the age old question "What is it to educate?" It is a systematic treatment of the aim of education, what determines the aim, the content-material and the principles governing the realization of this aim.

Three periods, second semester. Credit of three semester hours.

Alternates with Course 4. Given 1920-1921 and alternate years.

Prerequisite, Philosophy 1, 2, and 3, and Education 1.

- 3. School Organization and Method of Teaching.**—A study of the practical problems of organization and the application of principles.

Two periods, first semester. Credit of two semester hours.

Prerequisite, Philosophy 1, 2, and 3.

- 4. Secondary Education.**—A study of the principles and problems of the secondary school. The course is intended for those who are looking forward to High School and Superintendency positions.

Three periods, second semester. Credit of three semester hours.

Alternates with Course 2.

Prerequisite, Courses, Philosophy 1, 2, and 3, and Education 1.

- 5. Educational Psychology.**—This course deals with the psychology of learning, methods of mental measurement, memory and intelligence tests, treatment of precocity and deficiency, &c.

Two periods, second semester. Credit of two semester hours. Prerequisite, Philosophy 1 and 3.

- 6. The High School.**—This course is a continuation of Course 3, differing from it in concentrating attention on the problems of organization and method of teaching in the High School.

Two periods, second semester. Credit of two semester hours. Prerequisite, Philosophy 1, 2, and 3.

Note. The Pennsylvania School Code requires of all teachers who desire the State certificate courses 1, 3, and 5, in Philosophy, and at least six semester hours in Education. Some of the neighboring States require more.

ECONOMICS.

Professor Ewing.

- 1. Principles of Economics.**—A study of the conditions of national prosperity as wealth, competition, law, morals, and geographical situation. An analysis of the productive forces and industries of society. Exchange from angles of value, money, banking, marketing, and foreign commercial policy. Under distribution are examined principles determining rate of wages, interest, rent, and profit. Rational consumption. Luxury. Taxation. Current social policies aiming at economic reform.

Sophomore course for students in Groups III and VI. Junior and Senior course for other students. Three periods thruout the year. Credit of six semester hours.

Prerequisite for all other courses in Economics unless permission is otherwise given by Professor of Economics.

- 2. Money and Banking.**—An examination of the nature and functions of money. Theory of credit. Origin and development of banking. Domestic and foreign exchange. Bank currency. The clearing house. Commercial banking.

Bank supervision. Federal Reserve System. Foreign banking systems.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given in 1919-1920 and alternate years.

3. Public Finance.—Attention is given to sources of public revenue. Distribution of taxation. Land, property, and income tax. Expenditures for maintenance of government and defense. Administration of relief. Education. Aid to industry. Theory of public indebtedness. The budget system. Constant reference to the structure and functioning of American public finance.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1919-1920 and alternates years.

4. Sociology.—See Philosophy 4.

5. Business Law.—This course is designed to give the student a knowledge of the legal rights and obligations arising out of common business transactions. The fundamental laws pertaining to contracts, partnerships, corporations, negotiable instruments, sales, etc., are examined.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1919-1920 and alternate years.

6. Accounting.

A. Elementary Accounting.—This course deals with the technique of accounting in produce and provision business, general merchandise and manufacturing business. Attention is given to cost analysis and other fundamental features of the subject. Double entry system.

Sophomore course. One lecture and three hours of laboratory work per week thruout the year. Credit of six semester hours.

Prerequisite for Accounting B.

B. Advanced Accounting.—This course deals with some of the more advanced phases of accounting, such as depreciation, the reserve, goodwill, deficiency accounts, realization and liquidation, cost accounting and auditing.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Not given 1919-1920 and alternate years.

- 7. Labor Problems.**—A study of the relation of the employee to the employer, including topics as woman and child labor, immigration, sweating system, poverty and unemployment, strikes and boycotts, labor organization, agencies of industrial peace, profit sharing, conciliation and arbitration, industrial education and labor laws.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1920-1921 and alternate years.

- 8. Business Organization.**—A study of business structure in simple and compound forms as individual enterprise, partnership, joint stock company, corporation, combination trusts, community of interest organization, holding company and complete consolidation. Promotion, Underwriting. Reorganization and receivership. Public policy with reference to corporation and trust problems.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1920-1921 and alternate years.

- 9. Railway Transportation.**—A survey of the development of transportation and a discussion of its social and economic influence. Railway problems in the United States. Methods of competition, combination, discrimination and investments. Stock watering and speculation. Government regulation. The problems after the war of federal administration and ownership of the railroads.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1919-1920 and alternate years.

- 10. Rural Economics.**—Fundamental problems in farm management as ownership and tenancy, diversification of crops, large and small scale production, tools and buildings, buying and selling, farmers' accounts, credits and loans.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1919-1920 and alternate years.

- 11. Scientific Management.**—An analysis of the purpose, principles, and results of scientific management applied to activities of industrial and manufacturing corporations, to the management of farms, to the business of tradesmen,

to institutions of social service, and to departments of government administration.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1920-1921 and alternate years.

12. Industrial Organization.—A study of the growth in the United States of extractive industries as fishing, grazing, lumbering and mining, of genetic industries as agriculture, animal and dairy husbandry, and horticulture. The course includes also a study of the expansion of manufacturing activity.

Junior and Senior course. Three hours, second semester. Credit of three semester hours. Given 1920-1921 and alternate years.

POLITICAL SCIENCE.

Professor Ewing and Mr. Potter.

1. Principles of Political Science.—Origin and nature of the state. Sovereignty. Forms of government. Theories of state functions. Citizenship. The constitution of the state. Distribution of the powers of government. The electorate, the executive, the legislative and the judicial departments. Federal, local, colonial and party government.

Sophomore course for students in Groups III and VI. Sophomore. Junior and Senior course for other students. Three periods, first semester. Credit of three semester hours.

Prerequisite for other courses in Political Science.

2. American Government and Politics.—Colonial origins of American institutions. Evolution of federal and state constitutions. Evolution of political issues. Development of party machinery. General features of federal and state government. Executive, legislature, and judiciary. Administration. Foreign affairs. Commerce. Taxation and finance. Municipal organization and functions. Local rural government.

Sophomore course for students in Groups III and VI. Sophomore Junior and Senior course for other students. Three hours, second semester. Credit of three semester hours.

3. Comparative Government.—A study of the structure and functioning of European governments with constant reference to American federal and state governments.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1920-1921 and alternate years.

4. Constitutional Law.—A study of the American Constitution viewed in the light of the Supreme Court decisions. This course is given for those who wish to make an extended study of the basic principles of United States Government.

Junior and Senior course. Three hours, second semester. Credit of three semester hours. Given 1919-1920 and alternate years.

5. International Law.—The development of the rules of international law, the rights and obligations of nations in times of war and of peace, the settlement of international disputes are considered.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1919-1920 and alternate years.

6. Conservation of National Resources.—Conservation defined. Policies public and private. Conservation in relation to industrial evolution. Forests and minerals. Conservation and social energy. Idleness, ignorance, vice. Civilization as elimination of waste.

Junior and Senior course. Three periods, second semester Credit of three semester hours. Given 1919-1920 and alternate years.

7. Municipal Government.—A description of the organization of municipal government in the United States including an account of the various organs, their relations to one another, the powers and responsibilities of legislative and administrative officials. An examination of commission and city manager plans of government.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1920-1921 and alternate years.

BIOLOGY AND HYGIENE.

Professor Stahley.

Courses 1 to 7 are required studies in Group V. All the courses

are open as electives to those qualified to take them. The special pre-medical courses are 1, 2, and 3, required by the Pennsylvania State law. They are also valuable for general culture and as a preparation for teaching in secondary schools.

The work in all courses is carried on by lectures, demonstrations, dissections, drawings, daily quizzes, and stated examinations.

1. **General Biology.**—This course acquaints the student with microscopic technique and general laboratory methods, while he studies selected types of plants and animals, taken from the lower forms of life. The purpose is to ascertain fundamental facts of structure and life processes, with the significant relationships in the two great kingdoms of organic nature.

Junior Course. Three periods for twelve weeks. Two hours of lectures, and six hours of laboratory work.

2. **Vertebrate Zoölogy.**—The essential features of their variations, in the vertebrate type of animals, are carefully considered, while representative forms are being dissected, beginning with the highest class, the Mammalia, and passing down to the lowest Chordates. Questions relating to comparative morphology and physiology of Vertebrates are freely discussed.

Junior course. Three periods for fifteen weeks. Two hours lectures, and six hours of laboratory work.

3. **Invertebrate Zoölogy.**—Selected types of Invertebrates are dissected. The basic structural scheme which obtains in the various groups, their adaptations to environmental conditions, and their economic value, are among the subjects which claim attention. The bearing of the theory of evolution in animal development is discussed during the year.

Junior course. Three periods for fifteen weeks. Two hours of lectures and six laboratory hours. Courses 1, 2, 3 credit of eight semester hours.

4. **Human Anatomy and Physiology.**—Special attention is given to osteology, joints, ligaments, and muscles. Tramond's preparations, consisting of real bony joints, with accurately placed artificial ligaments, and Azou's dissectible

manikin, provide ample facilities for this part of the work. In this, as in all the branches of the course, physiological processes are constantly discussed.

Senior course. Three periods for seventeen weeks. Two hours of lectures, and six hours of laboratory work. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3.

- 5. Mammalian Histology.**—With the aid of prepared microscopic slides, the pupil studies the minute anatomy of the different tissues of the body. He also learns practically how to fix, harden, imbed, section, stain, and mount the important tissues.

Senior course. Three periods for twelve weeks. Two hours of lectures and six hours of laboratory work. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

- 6. Embryology.**—The principles of the maturation and fertilization of the germ elements are considered. The development of the chick is studied. Entire mounts are made, as well as mounts of serial sections of the incubating egg, from the first hour of incubation to the fifth day, when the organs are practically all formed.

Senior course. Three periods a week for six weeks. Two hours of lectures, and six hours of laboratory work. Credit of one semester hour.

Prerequisite, Courses 1, 2, and 3.

- 7. Botany.**—This course is in great part confined to the Spermatophyta, and continues the study of plants as begun in the General Biology course, where type forms from the Thallophytes, Bryophytes and Pteridophytes were considered. Morphology, physiology, and ecology are among the topics mostly emphasized. The study includes lectures, recitations, practical laboratory work and field excursions. Considerable attention is paid to plant analysis in the spring months.

Junior course. Two periods thruout the year. One hour recitation and two hours of laboratory work. Credit of four semester hours.

8. Sanitation and Bacteriology.—This is a course in municipal sanitation. The lecture part of the work is comprised in Course 9, second semester. The bacteriology of water analysis is pursued in a well-equipped laboratory.

Senior year. Laboratory. three periods for six weeks, one semester hour. Lectures, one semester hour. Total credit: two semester hours.

9. Sanitation and Hygiene.—During the first semester are discussed the questions of the waste and conservation of individual vitality in their application to efficient citizenship. During the second semester consideration is given to those essential principles of public hygiene which are necessary in protecting the health of communities.

Lectures, one hour weekly thruout the Senior year. Credit of two semester hours.

10. Physical Culture.—This end is sought under medical guidance in the Gymnasium during the winter months. A physical examination of each student is made when he enters college, and such kinds of gymnastic exercises are prescribed as seem desirable. The purpose is to encourage the promotion of health and physical vigor as necessary for successful mental application. A complete course of health lectures is annually given to the entering class.

Two weekly drills are required of all Freshmen and Sophomores from December 1 to March 15. Credits are allowed for attendance and attention.

CHEMISTRY.

Professors Breidenbaugh and Stover, Mr. Dickson and Assistants.

The courses in chemistry are not designed to prepare specialists in any department of the subject, but to give a general training in the science. The successful completion of these courses will prepare the student to enter on graduate or professional studies in any leading university, or qualify him for a more successful pursuit of any technical business, or fit him to teach chemistry in secondary schools.

The instructors are in daily attendance during the college term from 8 to 12 and from 1:30 to 4:30, except on Saturday afternoons.

- 1. General Chemistry.**—No previous acquaintance with the subject is required. Those offering chemistry for admission will be allowed to substitute, as far as is best for the individual, from Course 2. The general principles and the fundamental laws of the science are included in the course, which consists of lectures, readings from approved text-books—such as Remsen's "College Chemistry," Newell's "Inorganic Chemistry for Colleges," Kahlenberg's "Outlines of Chemistry"—and laboratory work for which careful record in note-books is required. There are daily quizzes and frequent examinations. The last several weeks of the course are devoted to a practical review and examination in the determination of a certain number of substances, based on the results of previous study.

Three lectures and six laboratory hours weekly for one year. Credit of six semester hours.

- 2. Qualitative Analysis.**—The student, following an outline prepared for the purpose, becomes acquainted with the general reactions of the elements of the several groups and from these data constructs the scheme of analysis which is applied in a number of determinations. There is constant supervision and personal conference over the work. Reference book, Fresenius' "Qualitative Analysis."

One lecture and nine laboratory hours weekly for one year. Credit of six semester hours.

Prerequisite, 1.

- 3. Quantitative Analysis.**—While such lectures as are desirable are given, this is essentially an individual laboratory course. An assigned minimum of work is required. Reference book, Fresenius' "Quantitative Analysis."

Nine hours of laboratory work weekly for one year. Credit of six semester hours.

Prerequisite, 1 and 2.

- 4. Organic Chemistry.**—Lectures and laboratory work. The laboratory work is partly preparations and partly the approximate analysis of animal and plant substance.

A. Three lectures weekly during the first semester. Credit of three semester hours.

B. Group IV. Eighteen laboratory hours weekly during the first semester. Credit of six semester hours.

C. Group V. Nine laboratory hours weekly during the year.
Credit of six semester hours.

Prerequisite, 1 and 2.

7. Special Quantitative Methods.—Students who are qualified are offered courses in advanced and applied analysis—such as mineral, ore, and water analysis, the examination of food stuffs and manufactured articles.

Such hours as may be arranged for during Senior year, or during Junior year by such as have completed the other work in the department. Credit of six to ten semester hours.

8. Industrial Chemistry.—A course of class-room exercises.

Three periods, second semester. Credit of three semester hours.

Prerequisite, 1, 2, and 3.

GEOLOGY AND MINERALOGY.

Professor Breidenbaugh.

1. Dynamical Geology.—This course of lectures gives the student an acquaintance with the facts concerning inorganic geology, and a discussion of the dynamical agencies which have been operative in bringing the earth to the condition in which we now find it.

Field work and the preparation of papers from personal observation and practical application to the work. Frequent examinations are held.

Two periods, first semester. Credit of two semester hours.

2. Historical Geology.—A comprehensive discussion of the principles of evolution, with illustrations from historic geology.

The student is assigned readings from the text-books of Dana, Le Conte, Chamberlain and Salisbury, and other authors.

Two periods, second semester. Credit of two semester hours.

3. Mineralogy.—Following a short course of practical work in Crystallography, there is a series of determinations of not

less than one hundred minerals by their physical and blowpipe characteristics.

Two periods thruout the year. Credit of four semester hours.

Prerequisite, Chemistry 1.

MATHEMATICS AND ASTRONOMY.

Acting Professor Rosenberger and Assistant.

1. **Plane Trigonometry and Algebra.**—Definitions and properties of the trigonometric functions; algebraic theory of exponents and indices; theory and use of logarithms; solutions of triangles.

Required of all Freshmen. Three periods during the first semester. Credit of three semester hours.

2. **Advanced Algebra.**—Elementary theory of equations; complex numbers, De Moivre's theorem and Argand's diagram; Binomial theorem.

Required of Freshmen in Groups I-VI. Three periods during the second semester. Credit of three semester hours.

3. **Advanced Algebra.**—A thoro introduction to graphs and determinants, limits and series, with the purpose of adequately preparing the students for the study of Analytic Geometry and the Calculus.

Required of Freshmen in Groups VII-X, and of Sophomores in Groups IV and V. Elective for Sophomores in Groups I-II, and VI. Three periods during the first semester. Credit of three semester hours.

4. **Plane Analytic Geometry.**—The locus of an equation; the line; the conic sections and other curves, their tangents, normals and areas; transformation of coördinates.

Required of Freshmen in Groups VII-X. Four periods during the second semester. Credit of four semester hours.

5. **Elementary Analysis.***—This course is intended primarily for those who do not intend to continue the study of Mathe-

* Students who intend taking Math. 6 are advised to take Math. 4 instead of Math. 5 in preparation.

matics, but who wish to obtain some knowledge of the fundamental principles of Analytic Geometry and the Calculus.

Required of Sophomores in Groups IV and V. Elective for Sophomores in Groups I-III. VI. Three periods during the second semester. Credit of three semester hours.

- 6. Differential and Integral Calculus.**—Theory of limits; fundamental formulae of differentiation with applications, including maxima and minima and rates; series and the expansion of functions; other applications. The indefinite and definite integral; reduction formulae; applications including areas and volumes.

Required of Sophomores in Groups VII-X. Elective for those who have taken Math. 4 or 5. Four periods thruout the year. Credit of eight semester hours.*

- 7. Differential Equations.**—The theory, together with the principles and devices, which will enable the student to integrate the ordinary or partial differential equations he is likely to encounter.

Elective for those who have taken Math. 6. Three periods during the first semester. Credit of three semester hours.

- 8. Solid Analytic Geometry.**—An introduction to the treatment of questions in three-dimensional Geometry by Algebraic methods.

This course is elective for all students prepared to pursue it and is a prerequisite to Physics 8, 9. Three periods during the second semester. Credit of three semester hours.

- 9. Introduction to Analysis.**—Topics from the Calculus not given in Math 6, together with an introduction to the Theory of Functions of Real Variables.

Elective for those who have taken Math. 6. Two periods thruout the year. Credit of four semester hours. (Omitted 1918-1919.)

- 10. Astronomy.**—A practical course in the determination of meridian, longitude, and time, and including the formulae of

* Students who intend taking Math. 6 are advised to take Math 4 instead of Math. 5 in preparation.

Spherical Trigonometry and the solution of spherical triangles.

Required of Juniors in Groups VII and VIII. Two periods for eight weeks, or the equivalent. Hours to be arranged. Credit of one semester hour.

PHYSICS.

Professor Parsons, Assistant Professor Cessna, and Mr. Miller.

- 1. General Physics.**—A complete course covering the whole subject of Physics. Mechanics, properties of matter, sound, heat, electricity and magnetism, and light. This is a modification of the Physics I course given in previous years, combined with the course in the Elements of Physics (A). The subjects of mechanics, electricity and magnetism, and light are continued the second year in course 3, and hence are not given as completely as the other subjects (sound and heat). Lectures illustrated by experiments, recitations, and problems assigned for work outside the class. No previous knowledge of the subject is assumed but a high school course is advantageous as preparation.

Required of Freshmen in the Engineering groups, Sophomores in Groups IV and V, and Juniors in Group I, and elective in other groups. Three hours per week thruout the year. Credit of six semester hours.

- 2. General Laboratory Physics.**—A laboratory course in General Physics, designed to accompany Course 1. (Excepting in special cases the two courses must be taken together). It is desirable, tho not required, that the student should have had an elementary laboratory course in Physics.

Four and one-half hours per week thruout the year. Credit of two semester hours.

- 3. Mechanics, Electricity and Magnetism, and Light.**—A more advanced course, continuing and completing the General Physics in Course 1, including alternating currents, elec-

tric waves, and the fundamentals of photography. Lectures, recitations, and problems.

Required of all students in Groups IV, V, and VII-X. Three hours per week thruout the year. Credit of six semester hours.

- 4. Physical Measurements.**—Laboratory experiments in mechanics, heat, electricity and magnetism, and light. A continuation of Course 2 and designed to accompany Course 3. *Four and one-half hours per week thruout the year. Credit of two semester hours.*

Courses 5 (Mechanics) and 6 (Electrical Measurements) have been discontinued, the subject matter being given in Course 3, and in the corresponding Engineering courses, and the more advanced mechanics under Course 8).

- 7. Recent Advances in Physics.**—Radioactivity, discharge of electricity thru gases, the electron theory, and other topics. Lectures illustrated by experiments.

Two lectures per week thruout the year. Credit of two semester hours.

Prerequisite, Physics 1 and 3, and Mathematics 6.

- 8, 9. Mathematical Physics.**—Lecture course in mathematical Physics for graduate students (or other advanced students). The two courses alternate in successive years, forming together a complete course, but the topics treated may vary from year to year. Such subjects as mechanics, hydromechanics, the kinetic theory of gases, the theory of sound, electricity and magnetism, physical optics, and the electro-magnetic theory, are treated.

Two or three lectures per week thruout the year.

Prerequisite, Physics 1-4, and Mathematics 6.

- 10. Advanced Laboratory Physics.**—This comprises all the advanced laboratory work not included in the preceding courses, and is designed for graduate students and other specializing in Physics. The experiments or problems assigned are variable and may include research on some assigned topic.

The course may be taken thru more than one year, credit being given proportional to the work done.

- 11. Physics Seminary.**—A meeting, for one hour a week throughout the year, of the advanced students, at which papers on assigned topics are presented, current topics are discussed, and reports given of recent work of investigators (obtained from reading the journals).

Credit of two semester hours.

- 12 Descriptive Astronomy.**—A course in general and descriptive astronomy (not mathematical). Text-book recitations, lectures, and some observatory work (observations of moon, planets, stars and nebula). Elective for all students.

Two hours per week, first semester. Credit of two semester hours.

- 12B. Physical Astronomy.**—Astrophysical problems, including the application of spectroscopy to the study of the heavenly bodies.

Two hours per week, second semester. Credit of two semester hours.

(Course 12 is being given in 1919-1920, and probably will be offered in 1920-1921.)

LECTURESHIP ON CONSTITUTIONAL LAW.

Henry Wolf Bickl , Esquire.

Four lectures on the Constitution of the United States; including (a) a discussion of the American Doctrine of Constitutional Law, and (b) a consideration of the commerce clause, (c) of the clause forbidding the impairment by the States of the obligation of contracts, and (d) of the guarantees of personal liberty and equality contained in the Fourteenth Amendment.

LECTURESHIP IN SOCIOLOGY.

Mrs. Mary G. Stuckenberg has founded a Lectureship in Sociology in honor of her late husband, J. H. W. Stuckenberg, D.D., LL.D., by the terms of which the College will have annually a lecture on some phase of Sociology from the standpoint of Christian Ethics by specialists in this important field. The lecture is given at such a time as is convenient to the lecturer chosen for the year.

ENGINEERING COURSES.

Full courses are offered in

**Civil Engineering,
Municipal Engineering,**

**Mechanical Engineering,
Electrical Engineering.**

All engineering students pursue the same subjects for the first two years. At the end of that time it is believed that most men will be able to make an intelligent choice between Civil and Municipal Engineering on the one hand, and between Mechanical and Electrical Engineering on the other. At the end of the third year a civil engineering student decides further between the general Civil Engineering course (Group VII) and the Municipal Engineering course (Group VIII). At the same point in his studies a mechanical engineering student decides between the course in Mechanical Engineering (Group IX) and that in Electrical Engineering (Group X).

Civil Engineering is an increasingly comprehensive term. Beside municipal engineering it includes among other subdivisions, topographic, railroad, and structural engineering. The Municipal (Sanitary) Engineering course is offered for those who wish to specialize somewhat in subjects relating more particularly to the problems of sanitation and civic betterment with which the engineering department of a modern city is concerned. The field for the mechanical engineer also has broadened of late, resulting in its subdivisions into branches of activity which call for technical knowledge in special fields. No attempt has been made in the following courses to meet these special demands, as it is the aim of the department to graduate men well grounded in the fundamentals and sufficiently broad in training to fill positions of some responsibility in any part of the field. Students interested in mechanical engineering are advised to follow Group IX unless especially interested in applied electricity; in that case they are recommended to the course in Electrical Engineering, Group X.

Engineering graduates not infrequently find employment in positions in which some knowledge of a branch of engineering other than that for which they have been trained is necessary or valuable. The engineering instruction is on this account designed to

be broad and fundamental, and subjects which tend toward extreme specialization are not offered.

An increasing proportion of graduates in engineering engage in callings more or less closely related to engineering, such as manufacturing, contracting, or commercial lines. In view of this there have been included in the engineering courses such subjects as will lay the foundations of a broad scientific education.

The following eight technical subjects underlie all engineering training, and are required of all students in Groups VII, VIII, IX and X.

1. **Elementary Mechanical Drawing.**—Use of instruments, orthographic, isometric and cabinet projections, simple sections, intersections and developments, lettering, sketching, tracing and blueprinting. Text-book, French's "Engineering Drawing."

Three hours thruout the year. Credit of two semester hours.

Note. The College provides drawing desks, etc., but each student furnishes his own drawing outfit, costing about twenty-five dollars. Students are urged to avoid the purchase of cheap instruments which soon become worthless. Engineering students use their drawing instruments thruout their course and for years afterward. The purchase of an outfit of good grade is therefore economy.

2. **Descriptive Geometry.**—The first semester's work comprises descriptive geometry, problems relating to the point, line, and plane in space, followed by a thoro drill in sections, intersections, and developments, with applications to engineering and architectural problems. The instruction is designed to develop in the student the power of concise reasoning. During the second semester the work is a continuation of Course 1.

Two hours of recitation and four hours of drawing weekly, first semester. Two periods of three hours each, drawing, second semester. Total credit of four semester hours.

3. **Mechanics (A). Statics and Dynamics.**—Forces in equilibrium, simple structures, translation and rotation, work, energy, power. Text-book, Poorman's "Applied Mechanics." A

conference period of two hours is held once a week for a free discussion of difficulties and the solution of problems.

Four recitations weekly thruout the year. Credit of ten semester hours.

Prerequisite, Physics 1 and 2, Mathematics 3 and 4.

- 5. Hydraulics.**—A study of the mechanics of water at rest and in motion, with applications to a variety of problems relating to the pressure of water and to its flow in natural and artificial channels, pipes, etc. Text-book, Merriman's "Treatise on Hydraulics."

Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Engineering 3 and Mathematics 5.

- 6. Materials Testing.**—Recitation and laboratory course in the study of the properties of engineering materials. In the first semester the standard tests of cement, mortar, and sand are made and compared. The common tensile, compressive, and transverse tests on steel, timbers, and concrete are made and discussed. The solution of practical problems is emphasized. During the second semester the results of the laboratory work of the first semester are applied in the application to the use of the materials in engineering work. Text-books, First Semester, Johnson's "Materials of Construction"; Second Semester, Boyd's "Strength of Materials."

Three recitations and three laboratory hours weekly, first semester. Credit of four semester hours. Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Engineering 3 and 4, and Mathematics 5.

- 7. Elements of Electrical Engineering.**—The application of the fundamentals of electricity and magnetism to electrical engineering practice. Theory, structure, and operation of electrical machinery. Recitation work supplemented by simple laboratory experiments.

One recitation and three laboratory hours weekly, first semester; two recitations and three laboratory hours, second semester. Credit of six semester hours.

Prerequisite, Physics 3, and 4, and Engineering 5.

- 8. General Engineering.**—A course partly of lectures and partly of problems intended to call to the student's attention some of the requirements in character and mind for success in engineering. The use of the slide rule, tables as given in the usual hand-books and the working out of a number of simple problems make up the remainder of the course.
- Credit of one semester hour.*

- 11. Plane Surveying.**—This course gives drill in the use of the more common surveying instruments, in the best methods of keeping notes, and in the computations and mapping required in connection with the usual work of a surveyor. Text-book Tracey's "Plane Surveying."
- Two hours of recitation and four hours of drawing weekly, second semester. Credit of three semester hours.*

CIVIL AND MUNICIPAL ENGINEERING.

Professor Clutz.

- 12. Surveying (A).**—Field work done during a period of three weeks immediately preceding the beginning of the Junior year.* It consists of drill in the use of the more common surveying instruments, supplemented by daily recitations designed to coördinate the instruction. Plotting the notes of the survey, tracing and blue-printing the map, and additional drill in plain lettering. Text-book, Tracy's "Plane Surveying."
- Three weeks (145 hours) in August and September. Total credit of three semester hours.*
- Prerequisite, Course 2.*

- 13, 14. Surveying (B).**—The field work is done during a period of three weeks immediately preceding the beginning of Senior year.* Topographic surveying, using a variety of methods and instruments, including the plane table, supplemented by daily recitations. A short railroad survey and location. Adjustments of instruments. The office

* The Summer Course in 1920 begins at 8 A. M. on Tuesday, Aug. 24.

work, done in term time, includes instruction in topographic drafting and the use of topographic maps, also the treatment of various subjects in higher surveying. Text-book, Wilson's "Topographic, Trigonometric, and Geodetic Surveying."

Three weeks (145 hours) in August and September. Two hours recitation and four hours of drawing, first semester. Total credit of four semester hours.

Prerequisite, Course 11, 12.

- 16. Railroads (A).**—A course in the mathematics of railroad curves, — simple, compound, and vertical; including switches and spirals. Earthwork calculation and the construction of mass diagrams. Text-books, Allen's "Railroad Curves and Earthwork," and "Field and Office Tables."

Four recitations weekly, second semester. Credit of four semester hours.

Prerequisite, Course 11, 12.

- 17. Railroads (B).**—The necessary preliminary surveys are made during the preceding summer field work (Course 13). Course 17 includes making the plans, calculations, etc., involved in the preparation of a full report on the proposed construction, including its cost. Economics of railroad construction.

Six hours of drawing and computation weekly, second semester. Credit of two semester hours. (Omitted 1919-1920.)

- 18. Structural Design (A).**—Stresses in framed structures, principally roof trusses and bridges of various types. Graphical methods of solution are employed. Text-book, Johnson, Bryan-Turneaure's "The Theory and Practice of Modern Framed Structures," Part I.

Two hours of recitation and four hours of drawing weekly, first semester. Prerequisite, Course 3.

- 19. Structural Design (B), (C).**—A course in the strength of materials as applied to the analytical design of structures of wood and steel. Beginning with beams the student finally makes all the calculations necessary in the complete design of a plate girder and trusses of the riveted and pin connected types. Text-book, Johnson, Bryan-Turneaure's

"The Theory and Practice of Modern Framed Structures,"
Part III.

Given in the second semester, Junior year, and first semester, Senior year. Two hours recitation and four hours computation or drafting weekly in the Junior year; three hours recitation and six hours computation or drawing in the Senior year.

28. Structural Design (D).—A course in the use and design of reinforced concrete.

Given second semester, Senior year. Two hours recitation and four hours computation or drafting. Credit of two semester hours.

20. Structural Drafting.—The making of detailed drawings for the component parts of a steel structure. Conformity with the best practice is required, and the drawings are carefully checked.

Six hours of drawing weekly, second semester. Credit of two semester hours.

21. Contracts and Specifications.—The elements of contract law as applied to the mutual relations of engineer, contractor, and owner. Critical review of typical specifications and practice in specification writing. Text-book, Mead's "Contracts, Specifications, and Engineering Relations."

Two recitations weekly, second semester. Credit of two semester hours.

22. Masonry.—Design and construction of stone and concrete structures, heavy foundations, arches, walls, and dams. Instruction is in part by recitation, but includes drafting-room work in the design of several typical structures. Text-book, Baker's "Masonry Construction."

Two recitations and three hours of drawing weekly, first semester. Credit of three semester hours.

23. Highways.—Recitations on the design, construction, and maintenance of roads and pavements, with especial consideration of the exigencies of present-day traffic. Text-book, Blanchard and Drowne's "Highway Engineering."

Two recitations weekly, second semester. Credit of two semester hours.

- 24. Water Supply Engineering.**—The quantity and quality of water from various sources. Works for the collection and storage of water, for its purification and for its distribution. Text-book, Turneaure and Russell's "Public Water Supplies."

Two recitations weekly, second semester. Credit of two semester hours.

- 25. Sewerage.**—Various types of design and construction are discussed in recitations. Plans for a small sewer system are made by each student. Modern methods for the purification and disposal of sewage and garbage. Visits are made to plants under construction and in use. Text-book, Follwell's "Sewerage."

Two recitations weekly, second semester. Credit of two semester hours.

- 26. Civil Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, thruout the year. Credit of two semester hours. Open only to Seniors in Groups VII and VIII.

MECHANICAL ENGINEERING.

Professor Rosenstengel.

- 31. Shop Work (A).**—Simple exercises in the formation of green sand moulds, supplemented by lectures on modern foundry practice. Bench and lathe work in wood, elements of pattern making.

Six laboratory hours weekly, first semester. Credit of two semester hours.

- 32. Shop Work (B).**—Forge practice in iron and steel. Shaping, hardening, and tempering of tools. Machine and bench work in metals. Lectures on modern shop practice.

Six laboratory hours weekly, second semester. Credit of two semester hours.

- 33. Kinematics.**—Theory of mechanisms, instant centers, cams, gears, linkages, velocity and acceleration diagrams, etc.

Recitation work supplemented by the solution of practical problems in the drawing room. Text-book, Barr and Wood's "Kinematics of Machinery."

Two recitations and six hours of drawing weekly, first semester. Credit of four semester hours.

Prerequisite, Course 2.

- 34. Machine Design (A).**—An elementary course showing the application of the fundamentals of mechanics and kinematics to machine design. Selection of mechanisms for specified work, analysis of energy and force problems in machines, and proportioning of detailed parts from theoretical and practical considerations. Text-book, Kimball and Barr's "Elements of Machine Design."

Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Course 6 (1st semester), 4, and 33.

- 35. Machine Design (B).**—Application of principles of Course 34 to the design of two typical machines, including all necessary computations; working drawings of most important parts, and a finished assembly drawing. Text-book, Kimball and Barr's "Elements of Machine Design."

One recitation and six hours of drawing weekly thruout the year. Credit of six semester hours.

Prerequisite, Course 34.

- 36. Heat Power Engineering (A).**—Thermodynamics of gases and vapors, theoretical gas cycles, application of theory to problems of commercial heat engines, engine performances and efficiencies. Text-book, Hirshfield and Barnard's "Elements of Heat Power Engineering."

Three recitations weekly thruout the year. Credit of six semester hours.

Prerequisite, Mathematics 5, and Physics 1 and 2.

- 37. Heat Power Engineering (B).**—A continuation of Course 36. Fuels, combustion, boilers, gas engines, steam engines and turbines, power house auxiliaries, etc. Efficiency and economy of operation. Selection and combination of elements for power houses. This study covers the theory

necessary for Course 38. Text-books, Hirshfield and Barnard's "Elements of Heat Power Engineering," and Gebhardt's "Steam Power Plant Engineering."

Three recitations weekly thruout the year. Credit of six semester hours.

Prerequisite, Course 36.

- 38. Power Plant Design.**—Design of a typical power plant, selection and arrangement of main units and auxiliaries. An outline drawing is made showing the location and arrangement of boilers, turbines, condensers, pumps, etc., the provision for coal and ash handling, and storage. Economic features of power house design emphasized. Reference book, Gebhardt's "Steam Power Plant Engineering."

Six hours of computation or drawing, one hour recitation, weekly, second semester Credit of three semester hours.

May be taken only in conjunction with Course 37.

- 39. Mechanical Engineering Laboratory.**—Calibration of common engineering measuring instruments, such as steam guages, thermometers, indicator springs; determinations of quality of steam; measurements of power; efficiency tests of boilers, gas engines, pumps, etc. Computation periods.

Three laboratory hours weekly thruout the year. Credit of two semester hours.

Prerequisite, Course 36.

- 40. Mechanical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, second semester. Credit of one semester hour.

(Open only to Seniors in Group IX.)

ELECTRICAL ENGINEERING.

Professor Rosenstengel.

- 45. Theory of Electrical Machinery.**—Fundamentals of the electric and magnetic circuit; representation of alternating currents and voltages by vectors and complex quantities;

study of the alternating current circuit; theory of transmission lines; transformers, alternators, synchronous and induction motors, direct current machines, etc. Text-books, Christie's "Electrical Engineering" and Gray's "Electrical Machine Design."

Five recitations weekly, first semester. Two recitations weekly, second semester. Credit of seven semester hours.

Prerequisite, Course 7.

- 46. Characteristics of Electrical Machinery.**—This course supplements the work of Course 45. Problems in alternating current circuits. Outline design and predetermination of performance characteristics of transmission lines, transformers, alternators, alternating current motors and direct current generators and motors. Practice is given in the use of standard hand books. Reference book, Gray's "Electrical Machine Design."

Three hours of computation weekly, first semester. Nine hours of computation weekly, second semester. Credit of four semester hours.

May be taken only in conjunction with Course 45.

- 47. Electrical Engineering Laboratory.**—Elementary and advanced experimental work in electrical engineering: the study of polyphase alternating current circuits, shape of A. C. waves, determination of the magnetic properties of steel and iron; commercial testing of alternators, transformers, synchronous motors, induction motors, D. C. machines, etc. Text-book, Karapetoff's "Experimental Electrical Engineering."

Six laboratory hours and one report weekly thruout the year. Credit of four semester hours.

Prerequisite, Course 7.

- 48. Electrical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, second semester. Credit of one semester hour. (Open only to Seniors in Group X.)

- 49. Telephones.**—Theory of the telephone. The design and construction of telephone instruments, switchboards, and transmission lines. Text-book.

Two recitations, second semester. Credit of two semester hours.

Prerequisite, Course E. E. 7.

Trips of Inspection.

Several short tours are arranged during the course for the inspection of engineering structures, power plants, shops, manufacturing establishments, etc., in the vicinity. Reports are prepared by each student from his individual notes.

Engineering Laboratory.

A departmental library and reading room of reference books, periodicals, and technical reports is being built up in connection with the College Library. Students have access to the following publications:

"Engineering News-Record," "Municipal Journal," "Railway Review," "Electrical World," "Industrial Management," and "American City."

Engineering Equipment.

For a detailed description of the equipment in engineering see page 134.

MILITARY SCIENCE AND TACTICS.

(Reserve Officers' Training Corps.)

Captain Tuttle and First Sergeants Ryan and Duke.

As a part of the program for national preparedness, Congress by Act of June 3, 1916, authorized the establishment and maintenance in civil institutions of learning fulfilling certain requirements, of units of the Reserve Officers' Training Corps, so that in time of national emergency there may be a sufficient number of educated men, trained in military science and tactics, to officer and lead intelligently the large armies upon which the safety of the country will depend. Under the provisions of this Act the President of the United States has established an infantry unit, senior division, of the Reserve Officers' Training Corps in this College and has detailed a regular army officer to serve here as Professor of Military Science and Tactics and a noncommissioned officer to serve as his assistant. In order to encourage students to enter this corps said Act of Congress makes very liberal provisions furnishing the members free of charge all the needed equipment in arms, ammunition, uniforms, and, in the case of those taking the advanced course, additional uniforms, training camp expenses, and an allowance in cash equal to the regular army garrison ration. The work includes lectures and classroom work as well as military drill, target practice and gymnastic exercises. The mental as well as physical benefits which a student may derive from this course are obvious; and it supplies in the most approved form that element of training in discipline and obedience to authority which has been largely lacking in the educational system of our country. There is a great demand thruout the country for teachers of high school grades who are able to give military instruction.

The courses as outlined on the following pages are prescribed by the War Department to serve as a guide only for all R. O. T. C. units. Each unit has local advantages along certain lines. In this unit a special study of the battle of Gettysburg will be made. The battlefield covers about twenty-five square miles of ground

but the College is centrally located and no part of the field is more than four miles from the campus. The study will include the battle in detail, the terrain, and the results. When this study is completed the same terrain is used in a map maneuver under modern conditions of artillery, motor trucks, machine guns, and high power rifles.

A course if elected becomes exactly like a required course in mathematics or history, and the student must complete it, but other than this it involves no compulsory military obligations.

The work is nearly all practical and the maximum of physical training is embodied. There is considerable range work with the U. S. Rifle, model of 1917, and with the U. S. Revolver, model of 1917.

Distinctive insignia, to be worn on the upper part of the left forearm, is issued to each student to indicate his rank as a cadet, and additional insignia is issued to indicate his rating for excellence obtained during the course of instruction and also a badge for proficiency in target practice for those who can earn it.

The course in Military Science and Tactics is divided into two parts, each one requiring two years of work. For the amount of college credit see the outline of Groups, pp. 32-58.

BASIC COURSE.

Any student electing this course must devote an average of at least three hours per week for two successive years to the work required (First Year and Second Year, pp. 106-107).

ADVANCED COURSE.

When any member of the Reserve Officers' Training Corps has completed (here or elsewhere) the first two academic years of service, and has been recommended for further military training by the President of the College and the Professor of Military Science and Tactics, he will be furnished by the U. S. Government commutation of subsistence (an allowance) equal to the regular garrison ration prescribed for the Army. This allowance now is 40 cents per day, extending thru and including the summer recess between third and fourth years. A student electing to take this advanced course will be required to devote an average of at least five hours per week to the work during the remainder of his college course (Third Year and Fourth Year, pp. 107-108). He must also attend the training camp prescribed by the Secretary of War

between the third and fourth years, his transportation to and from this camp, clothing and subsistence while there being furnished by the U. S. Government.

OUTLINE OF THE COURSES IN MILITARY SCIENCE AND TACTICS.

First Year.

1. **Military Art.**—Three hours a week during the first semester.

(a). **Practical.** Weight 10.

Physical drill (Manual of Physical Training—Koehler); Infantry drill (U. S. Infantry Drill Regulations), to include the School of the Soldier, Squad and Company, close and extended order. Preliminary instruction sighting position and aiming drills, gallery practice, nomenclature and care of rifle and equipment.

(b). **Theoretical.** Weight 4.

Theory of target practice, individual and collective (use of landscape targets made by U. S. Military Disciplinary Barracks, Fort Leavenworth, Kans.); military organization (Tables of Organization); map reading; service of security; personal hygiene.

2. **Military Art.**—Three hours a week during the second semester.

(a). **Practical.** Weight 10.

Physical drill (Manual of Physical Training—Koehler); Infantry drill (U. S. Infantry Drill Regulations), to include School of Battalion, special attention devoted to fire direction and control; ceremonies; manuals (Part V, Infantry Drill Regulations); bayonet combat; intrenchments (584-595, Infantry Drill Regulations); first-aid instruction; range and gallery practice.

(b). **Theoretical.** Weight 4.

Lectures, general military policy as shown by military history of United States and military obligations of citizenship; service of information, combat (to be illustrated by small tactical exercises); U. S. Infantry Drill Regulations, to include School of Company; camp sanitation for small commands.

Second Year.

3. Military Art.—Three hours a week during the first semester.

(a). Practical. Weight 10.

The same as Course 2(a). Combat firing, if practicable, but collective firing should be attempted in indoor ranges by devices now in vogue at United States Disciplinary Barracks.

(b). Theoraetical. Weight 4.

United States Infantry Drill Regulations, to include School of Battalion and Combat (350-622); Small-Arms Firing Regulations; lectures as in (b) Course 2; map reading; camp sanitation and camping expedients.

4. Military Art.—Three hours a week during the second semester.

(a). Practical. Weight 10.

The same as Course 2(a); signaling; semaphore and flag; first-aid. Work with sand table by constructing to scale intrenchments, field works, obstacles, bridges, etc. Comparison of ground forms (constructed to scale) with terrain as represented on map; range practice.

(b). Theoretical. Weight 4.

Lectures, military history (recent); service of information and security (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping expedients); marches and camps (Field Service Regulations and Infantry Drill Regulations).

Third Year. Advanced Course.

5. Military Art.—Five hours a week during the first semester.

(a). Practical. Weight 13.

Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises laid down for the unit. Military sketching.

(b). Theoretical. Weight 11.

Minor tactics; field orders (studies in minor tactics, United States School of the Line); map maneuvers.

Weight 8.

Company administration, general principles (papers and returns). Weight 1.

Military History. Weight 2.

6. Military Art.—Five hours a week during the second semester**(a). Practical. Weight 13.**

Same as (a) Course 5. Military sketching.

(b). Theoretical. Weight 11.

Minor tactics (continued); map maneuvers. Weight 8.

Elements of international law. Weight 2. Property accountability; method of obtaining supplies and equipment (Army Regulations). Weight 1.

Fourth Year. Advanced Course.**7. Military Art.**—Five hours a week during the first semester.**(a). Practical. Weight 13.**

Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises scheduled for the unit. Military sketching.

(b). Theoretical. Weight 11.

Tactical problems, small forces, all arms combined, map maneuvers; court-martial proceedings. (Manual for Courts-martial).

International relations of America from discovery to present day; gradual growth of principles of international law embodied in American diplomacy, legislation, and treatise.

Lectures: Psychology of war and kindred subjects.

General principles of strategy only, planned to show the intimate relationship between the statesman and the soldier (not to exceed 5 lectures).

8. Military Art.—Five hours a week during the second semester.

(a). Practical Weight 13.

Same as Course 7(a).

(b). Theoretical. Weight 11.

Tactical problems (continued); map maneuvers. Rifle in war.

Lectures on military history and policy.

No student electing one of these courses will be promoted to the next higher class in College or graduated from College unless he has completed the work of the course for the previous year to the satisfaction of the Professor of Military Science and Tactics.

The appointment of cadet officers and noncommissioned officers for the Corps are made from members of the Junior and Senior Classes in College and from members taking post-graduate courses, provided there is a sufficient number. It is the intention to give the student entering the advanced course the benefit of an opportunity of training in a responsible rather than in a subordinate position.

No military duties in addition to the training courses outlined are required from members of the Reserve Officers' Training Corps.

A student having completed these courses will on graduation from College be eligible for appointment to the Officers' Reserve Corps as a temporary second lieutenant of the regular army in times of peace for purposes of further instruction, for a period not exceeding six months, with all the allowances now provided by law for that grade, but with pay at the rate of \$100 per month.

For those who aspire to enter the ranks of regular army officers from civil life the Reserve Officers' Training Corps in our College offers unexcelled advantages and opportunities.

WHAT THE GOVERNMENT OFFERS TO MEMBERS OF THE R. O. T. C.

(Extract from information bulletin issued by the Committee on Education and Special Training, War Department, Feb. 1, 1919).

Each man will receive:

(actual cost value).

1 coat, wool, O. D.\$ 9.79

1 breeches, wool, O. D.	6.32
1 shoes, russet or marching	4.65
1 shirt, wool, O. D.	3.50
1 overcoat, O. D., short	13.56
1 hat cord .....	.09
1 leggings, pair, canvas	1.05
1 hat, service	2.00
2 collar ornaments .....	.07
1 belt .....	.23
chevrons .....	.57

Per year\$41.83

Additional for those attending summer camps:

2 breeches, cotton, O. D.	\$ 3.38
1 shoes, russet or marching	4.65
1 shirt, wool, O. D.	3.50
1 leggings, pair, canvas	1.05
1 hat additional	2.00
1 hat cord .....	.09

Per year\$14.67

Each man will receive in four years, property valued at

4 X \$41.83\$167.32

Each man will receive in three summers property valued at

3 X \$14.07 42.21

Each man recommended will receive commutation of sub-

sistence, two years, or 590 days, at 40c. per day 236.00

Each man may receive commutation of subsistence in kind

(not paid in cash) three summers, 138 days, at 40c. per
day 54.00

Transportation average 1000 miles per summer, or 3000

miles for three summers, at 4c. 120.00

\$621.33

Average for each of the four years in college course\$155.33

Besides the items mentioned above, equipment issued for

each student amounts to at least\$ 50.00

The privilege of buying extra uniform at the above mentioned prices from the Quartermaster Department, will have an additional saving value to those who take advantage of it.

MILITARY SERVICE CREDITS.

The College realizes the extent to which military service has affected the plans of young men of college age. It also appreciates the fact that the discipline of the army has had an educational value that is not inconsiderable. In view of these facts, aiming to encourage the men to complete their college education and at the same time maintaining the college standards, the College has decided that, in cases where the preliminary training meets our college entrance requirements, the men who were in the service may receive a credit of one and a half semester hour for each month of service. In no case shall this allowance exceed fifteen semester hours.

GENERAL INFORMATION.

The College aims to develop the greatest possible individuality and the highest manhood of the student. The prevailing influences are such as tend to lead young men to an active Christian life and to a full realization of their personal responsibilities. The immediate supervision of the students is in the hands of the President and Dean with the Class Advisers.

CLASS ADVISERS.

A professor is appointed as Adviser for each class. The members of the class should present any request to the Faculty thru their Class Adviser and confer with him on personal and college matters (see page 16 for list of Class Advisers).

STUDENT GROUP ADVISERS.

The professor at the head of each Department acts as the adviser of all the students having a major in his Department. He is known as the Group Adviser. He exercises oversight in the student's selection of electives and in the general character of his work. The Group Advisers are as follows: Group I, Professor Biklé; Group II, Professor Grimm; Group III, Professor Valentine; Group IV, Professors Breidenbaugh and Parsons; Group V, Professor Stahley; Group VI, Professor Ewing; Groups VII and VIII, Professor Clutz; Groups IX and X, Professor Rosenstengel.

STUDENT COUNCIL.

Without lessening its authority and responsibility, the

Faculty has delegated certain duties in government to the student body as an exercise in self-government. The students act through a Student Council consisting of four Seniors, three Juniors, two Sophomores, and one Freshman, elected by their respective classes. This Council acts in certain matters of discipline and in matters concerning the general welfare of the student body, and is one medium of communication between the students and the Faculty. Hazing in any form is forbidden. Any practice involving physical, personal injury and bodily harm or the performance of any humiliating action entailing surrender of dignity and self-respect under fear or threat of force, is regarded as hazing. To have or to drink intoxicating beverages is forbidden.

TERMS AND VACATIONS.

The college year of 35 weeks is divided into two semesters. The first semester begins at 11 A. M. on the third Wednesday in September and continues, with recesses at Thanksgiving and Christmas, to the end of January; the second semester begins when the first semester ends and continues, with an Easter recess, to Commencement Day, the second Wednesday of June. The closing days of each semester are devoted to examinations.

RULES GOVERNING ATTENDANCE.

(1). Every male student rooming under college regulations is required to attend on week days a prayer service at 12 M. in Brua Chapel. If absent in any semester 15 times the student is warned and if absent 20 times he is suspended for 2 weeks.

(2). Every student is required to attend one designated service every Sunday in the College Church. Any student, however, affiliated with another denomination than the Lutheran will, on the parent's request, be permitted to attend the church for which request is made.

If absent 2 times in any semester the student is warned and if absent 3 times he is suspended for 2 weeks. The proctor keeps the record of attendance at chapel and church, and a student permitted to attend another church must report his attendance each week to the proctor.

(3). If, however, a student, due to protracted sickness or for some other imperative reason, exceeds the number of absences allowed for church and chapel, the Dean is authorized to extend the number of absences allowed before the penalties noted above become operative.

(4). Each student is allowed individually 10 per cent absences from class room work each semester in each course. Fractions are not counted and absences may not exceed 4 in any course during a single semester. The student is urged and expected to make use of this allowance of absences only in case of sickness or for some other good reason.

(5). A further allowance of absences may, on petition, be granted members of athletic teams and musical organizations, to participants in literary contests, and to representatives of societies for the purpose of attending conventions, but in no case shall an individual student be allowed a total of more than 15 per cent absences. This further allowance in no case to be more than 50 per cent additional.

(6). Absences are reckoned from the first day of the semester. Any absence on the two days preceding or the two days following any recess is counted as 2 absences.

(7). Absences beyond the number allowed from class work, in (4) and (5) above, will not be excused for any cause whatever, and no extension of absences will be allowed; and all excess absences in any class count as zero on the daily class grade. But, if any student has not taken his allowed absences needlessly, and has exceeded the allowed amount because of protracted sickness or

other imperative necessity, the instructor at his discretion may assign extra work as a substitute for the work missed on account of the excess absences and may credit the grade for this work in the place of the zeros given for the excess absences. The student should understand that he cannot demand this from any instructor as a right, and that such a privilege is more likely to be granted to a student whose previous record for attendance and devotion to daily duties is good than to one whose record is poor.

(8). In case of absences from the class work in any subject in excess of the allowed amount, the instructor may exclude the student from the semester examinations in the subject, or may even give him an "F" for the semester grade necessitating the repetition of the semester's work in this course. The Faculty may also in case of excess absences in 2 or more subjects, or in church, chapel, and class, require the work in all courses of the semester to be repeated.

(9). A student returning to college from a suspension for absence from chapel or church is permitted no absence from chapel or church, as the case may be, for the remainder of the semester and is required to make up the work missed in such manner and at such time as the several instructors may require. For such extra work on the part of the instructors the student must pay to the college Treasurer, for each course, the sum of three dollars,—the Registrar to report to the Treasurer the number of courses for which such payment is due. This charge also applies to absences incurred under item (7), cases of protracted sickness excepted.

Physical training is required of all male students of the Freshman and Sophomore Classes who are not members of the Reserve Officers' Training Corps.

ELECTIVES.

A student having electives must deposit with the Registrar, within the first two days of the year, a written list of his electives, bearing the endorsement of the student's Group Adviser and of the instructors concerned. After the first week of the year changes in electives can be made only when approved by the Faculty, under such conditions as may be determined in each case. No regular student may drop an elective subject without faculty permission; failure to secure such permission will be regarded as a deficiency in that subject.

EXAMINATIONS.

Examinations are held in all subjects at the close of each semester or when, during the term, a subject is completed. Instructors may hold topical or quiz examinations at the time of any of the regular appointments with the class. Absences from these examinations are governed by the rules given above.

CONDITIONS AND DEFICIENCIES.

Freshman entrance conditions must be satisfied by the beginning of the Sophomore year.

A student whose grade in any course is reported as deficient at the close of a semester must present himself for re-examination at the beginning of the next semester; failing in this examination he must repeat the semester's work in that course. The matter of re-examinations is governed by the following rules:

1. Re-examinations for those students whose grade, as reported to the Registrar at the close of the previous semester, is "E" or "incomplete," shall be held at such a time as the instructor shall appoint, not later than Octo-

ber 10 in the first semester and not later than March 1 in the second semester.

2. Re-examinations must be given by the instructor at such a time as not to conflict with any of the regular classwork of the student.

3. A student may be allowed, upon written permission of the instructor, approved by the group adviser, to defer the re-examination until the final examination at the end of the semester's work in the next succeeding class in the given subject.

4. If the student fails to pass the re-examination given under rules 1 or 3, he must repeat the semester's work in the given course.

5. Failure to report for the re-examination at the time appointed will count as a failure in the examination unless, owing to sickness or urgent necessity, the faculty allow another re-examination.

A student who at the beginning of any college year continues deficient in more than one third of a year's work will be enrolled with the class in which the deficiency occurs. The student will not be advanced in enrollment with his class until the deficiency has been removed.

A student deficient at the beginning of a year in courses aggregating twelve semester hours will be required to drop a corresponding number of semester hours in the regular work of the year.

RECORDS.

A record of scholarship and deportment, under the care of the Registrar, is kept for each student. The grades of scholarship are designated as follows: A (excellent), B (good), C (fair), D (poor, barely passed), E (failed, but entitled to another examination), F (failed utterly and must repeat with the next class), and Inc. (incomplete).

Each student who graduates will, on request in person,

be furnished with a certified copy of his college record. Requests for such certificates, when furnished in duplicate, or thru correspondence, or on forms other than those supplied by the College, should be accompanied by a remittance of one dollar. Students who leave college before graduation and who are in good standing are entitled to certificates on the same terms.

REPORT.

A report from the above record is sent to the parents or guardian of each student at the end of each semester. About the middle of each semester notice is given to the student and to his parents or guardian if his work is of low grade or if he has an excessive number of absences.

REQUIREMENTS FOR GRADUATION.

Every student completing the prescribed work of any group of studies as tabulated under Outline of Groups, p. 32-58; and an original English essay (see page 121) will receive the degree pertaining to that group, either Bachelor of Arts or Bachelor of Science; provided, however, that no regular student shall carry less than sixteen or more than twenty semester hours in any semester, unless by special permission of the Faculty.

No student will be graduated who is not present at Commencement, unless he be excused by the Faculty.

MASTER'S DEGREE.

The degrees of Master of Arts and Master of Science are conferred on those having the Bachelor's degree from approved colleges, according to the following regulations:

1. The Master's degree is conferred upon graduate students on the completion of at least one year of resident work. Such students must present to the Faculty Committee on Advanced Degrees, for approval, a plan of ad-

vanced studies involving the equivalent of at least twenty-four semester hours. It is recommended that at least one-half of the course be devoted to some one subject.

2. The Master's degree is also conferred on non-resident graduates of this College. These must, however, at the beginning of their candidacy arrange with the Faculty Committee on Advanced Degrees (see page 17) a systematic course of study, and must report at stated times to the head of the department in which the subjects have been chosen.

In either case the candidate must pass examinations satisfactory to his instructors and to the committee. Previous to the final examinations the instructors in charge shall file with the committee a statement of the work done by the candidate. If the report is satisfactory, the candidate will be permitted to present himself for final examination. He shall also be required to prepare an essay or thesis upon an approved subject bearing on his principal study. This essay or thesis must be completed and submitted to the committee at least one month prior to the Commencement at which the degree is to be conferred; if accepted, it becomes the property of the College.

Graduates of this College who have devoted at least one year to graduate work in residence at other colleges or universities and have fulfilled the above requirements may be admitted by the Faculty to the Master's degree. It may also be conferred upon college graduates who have completed courses of advanced study in professional schools, provided that the work done be in kind, grade, and amount equivalent to that required of other candidates for the same degree and that it has not been offered to satisfy the requirements for a professional degree.

HONORS.

The following honors will be awarded at the close of each year:

A. Final Honors will be awarded to members of the graduating class meeting the following conditions:

General Final Highest Honors will be awarded to those students who have maintained thruout their four years the grade of A in all of their studies.

General Final Honors will be awarded to those students who have maintained the grade A in at least half of the work of their four college years and have not fallen below the grade B in their studies.

Students entering at the beginning of the Sophomore year will be awarded the same honors if for three years they meet the above requirements as to grade.

B. Department Final Honors. If the head of any department recommends a student taking a major in that department as having shown special excellence in that work, the student shall be awarded Final Honors in that department provided he does not have a grade below B in more than three courses in other departments.

C. Class Honors for Freshman, Sophomore, Junior, and Senior Years. Highest Honors for the designated year will be awarded to those members of these classes who have maintained the grade A in all of their studies thruout the year.

Class Honors for any particular year will be awarded to those members of the class who have maintained the grade A in at least half of the work of the year and do not have a grade below B in any of their studies for the year.

These awards are announced at Commencement and published in the next Catalog number of the BULLETIN.

PRIZES.

Muhlenberg Freshman Prize. The interest of a fund of five hundred dollars, contributed by F. A. Muhlenberg, D.D., LL.D., a former professor in this College, is given at the close of each year to that member of the Freshman

Class who is found to have attained the highest grade of scholarship in Group I.

Baum Mathematical Prize. Charles Baum, M.D., Ph.D., Class of 1874, of Philadelphia, has contributed five hundred dollars, the income from which is to be given annually to that member of the Sophomore Class who shows the greatest proficiency in Mathematics.

Hassler Latin Prize. Mr. Charles W. Hassler furnished a fund, the interest of which is annually expended for the purchase of a Gold Medal, to be presented to that student of the Junior Class, who, at the end of the year, shall be rated as the best Latin scholar.

Graeff Prize. This prize was founded by Mr. John E. Graeff, Class of 1843. The interest on a fund of \$500 is awarded for the best English Essay from a member of the Senior Class, on a subject previously assigned. The decision is made by a committee appointed by the Professor of English.

In order to complete the requirements for graduation (see p. 118) each member of the Senior Class must write and submit, on or before May 1 of the Senior year, an original essay in English, in length not less than 1500 words nor more than 3,000. This essay may be submitted in competition for the Graeff Prize; provided that in such case the subject shall be the subject announced in that contest.

Prizes in Debate. The Literary Societies of the College provide three prizes of \$36, \$24, and \$15, respectively, for the encouragement of skill in debating. The first contest takes place about the middle of November between teams chosen by the Sophomore and Freshman Classes, respectively, and the winning team is rewarded with \$15. The second contest between the winning team and a team from the Junior Class, takes place about the middle of March, and the team that wins this contest receives \$24. The third contest between the second vic-

tors and a team from the Senior Class, takes place about the middle of May, and the winners of this contest receive \$36. Winners of the prize of \$36 are excluded from further competition.

Elinore Taylor Brewer Greek Prize. The Class of 1883 has contributed the sum of five hundred dollars, the income from which is annually awarded as a prize to that member of the Sophomore Class who has done the best work in the regular Sophomore Greek Course.

Samuel Garver Latin Prize. The income from a fund of \$500 established by Rev. Austin S. Garver, A.M., a member of the Class of 1869, in memory of his father, Samuel Garver, is annually awarded to the student who has made the greatest progress in Latin during his Freshman year.

Samuel Garver Greek Prize. The income of a fund of \$500 established by Rev. Austin S. Garver, A.M., a member of the Class of 1869, in memory of his father, Samuel Garver, is annually awarded to the student who has made the greatest progress in Greek during his Freshman year.

No student shall be eligible to any honor or prize unless he has had at our own College all the work required of all students in all groups for the year or years for which the honor or prize is awarded; and (unless substitutions have been approved at the time by special Faculty action) he must have had also all the work required in his group for the year or years for which the honor or prize is awarded.

SCHOLARSHIPS AND AIDS FOR STUDENTS.

Endowed scholarships worth \$30 each, and a limited number of scholarships worth \$50 each, are awarded annually to deserving students by the Finance Committee of the Board of Trustees. All applications for these scholarships must be made in writing and must state in

full the reasons for the request. Such applications must be handed to the President before October 1 of the college year.

An endowment fund of \$5,000 for the aid of worthy and needy students has been established by Mr. C. H. Boyer as a memorial to his father, Rev. Matthew G. Boyer, D.D., '65, for over eighteen years a most faithful and efficient member of the Board of Trustees of the College. The income from this fund is divided into five scholarships of \$50 each, awarded annually. Applications for this aid must be in writing addressed to Mr. C. H. Boyer, 29 La Salle St., Chicago, Ill., or to the President, before October 1 of the college year.

Rev. Sydney E. Bateman, M.D., Class of 1887, has established a scholarship fund of \$500, the income from which is awarded each year to a needy student preparing for the ministry. Applications for this scholarship must be handed to the President before October 1 of the college year.

The Parent Education Society of the General Synod controls ten scholarships, worth \$30 each, which are open to young men preparing for the ministry in the Lutheran Church. Applications for the use of these scholarships should be made to the Chairman of the Scholarship Committee, Rev. J. A. Singmaster, D.D., Gettysburg, Pa.

A scholarship of \$350 is granted annually to an advanced student who has shown special aptitude and excellence in the study of Chemistry. The money is paid thru the College by the Du Pont Powder Company in recognition of the splendid work done in the past by our former graduates employed by that concern.

A number of other \$30 scholarships have been endowed and are controlled by congregations, synods, and individuals. The Gettysburg School Board controls such a scholarship established by C. W. Thompson, Esq., of Lebanon, Pa. The authorizations from those controlling

these scholarships must be handed to the President before October 1 of the college year.

A considerable number of students earn part of their college fees by caring for halls and class rooms and by doing other work about the campus and buildings. Twenty-five cents an hour is allowed for these services. All applicants for such employment must hand a written request for it to the President before October 1 of the college year.

Upperclassmen are employed as proctors and caretakers of the various college buildings and as assistants in the laboratories. One is employed to have charge of the Reading Room. These appointments are made by the Faculty; applications for such positions must be made in writing and must be in the hands of the President before May 1 of the preceding college year.

There are many opportunities in the town of Gettysburg for students to earn money. Rev. S. F. Snyder, Assistant to the President, will be glad to assist those who desire such outside employment. Many students skilled in the use of musical instruments earn money by playing at various functions in the town and in the College. Some of the students are granted allowances by the Athletic Council for work and supervision in the Gymnasium and on the Athletic Field. A number of students earn their board by managing student eating clubs, of which there is a large number, or by waiting on the table. Others earn money by acting as newspaper correspondents.

Any student wishing to engage in business or to undertake employment during term time is required to obtain permission from the President or Dean. Any violation of this rule is regarded as a misdemeanor.

The children of clergymen are allowed a reduction of one-half of the tuition.

TREASURER'S BILLS.

The bills of the College Treasurer are made out for each semester and include half of each item for the college year. The bill for any semester must be paid within six weeks from the opening of that semester.

No student will be graduated until all financial obligations to the College and for class publications and other student interests are settled, except when a student has registered a timely protest with the Faculty and the claim for relief has been allowed. No credits for college work done or statement of honorable dismissal will be certified to until these financial obligations have been paid.

COLLEGE FEES.

A Registration Fee of \$5 is required on entering College and is payable to the Registrar. If a student's registration is not completed within ten days after the issue of his registration card, an additional fee of \$2.50 will be charged.

The annual charge for Tuition is \$125. The payment of this fee also admits the student free of charge to all college athletic games held in Gettysburg.

Special course students must pay \$10 tuition per course for each semester, but they are not required to pay the registration fee.

In any course pursued for a Master's degree the charge for Tuition is \$75, when all the instruction has been given by members of the College Faculty. Of this \$25 is considered as a registration fee and is payable in advance, the balance being due one month previous to the date set for the conferring of the degree. Laboratory charges are extra. When the Master's degree is taken *in absentia* the total fee is \$25 payable in advance. Students in the Theological Seminary at Gettysburg may become candidates for the Master's degree by paying the regular regis-

tration fee of \$25; they are exempt from the payment of tuition exclusive of possible laboratory fees.

ANNUAL LABORATORY FEES.

Based on three laboratory periods per week these are:

Biological Laboratory	\$14.00
Chemical Laboratory	18.00
Physical Laboratory	12.00
Mineralogy for the course	3.00
Botany for the course	4.00
Bacteriology for the course	5.00

In addition to the Chemical Laboratory Fee a charge is made for apparatus broken or not returned in good condition. In the Physical Laboratory an additional charge is made for material used and any damage done to apparatus.

ANNUAL ENGINEERING FEES.

Junior year	\$15.00
Senior year	15.00
Summer Course in Surveying	10.00

In addition to these engineering fees a charge is made for apparatus broken or not returned in good order. A charge is also made for engineering apparatus used by students who do not pay the annual engineering fees.

BOARDING.

The College does not maintain a dining hall. The students receive excellent board in clubs and with private families at a cost of from \$4.50 to \$5.50 per week.

ESTIMATED COST OF A YEAR IN COLLEGE.

The expenses of a college student depend largely on the training and habits of the individual. To aid the student rooming in a College dormitory to calculate the

probable cost of a year in college at Gettysburg the following estimates are submitted:

(A). ITEMS ON COLLEGE BILL.

	Low.	Moderate.	Liberal.
Tuition	\$125.00	\$125.00	\$125.00
Room rent and heat (half room	11.00	30.00	50.00
Electric light (half room) ..	3.15	3.15	6.30
<hr/>			
Payable to College	\$138.15	\$158.15	\$181.30

(B). OTHER EXPENSES.

Board for 35 weeks	\$157.50	\$175.00	\$192.50
Laundry	15.00	18.00	20.00
Books and stationery	15.00	18.00	20.00

Est'd cost for college year. \$326.65 \$369.15 \$413.80

To the above should be added laboratory or engineering fees in case the student takes courses involving such charges.

COLLEGE DORMITORY ROOMS.

The following rules govern the assignment of dormitory rooms in Pennsylvania Hall, Cottage Hall, McKnight Hall, and Athletic Field House.

Non-resident students are required to room in the college dormitories unless excused by the Committee on Dormitory Rooms. A non-resident student rooming outside of the dormitories will be charged \$7.50 each semester for this privilege unless there are no dormitory accommodations available or for special reasons this charge is remitted by the Faculty. Not more than two students will be allowed to room in a fraternity house.

No reservations of room beyond the actual needs of the

students are permitted. No student is allowed to change his room or to take in a roommate without permission from the Committee on Dormitory Rooms and if allowed a new rental contract must be signed.

RESERVATIONS OF ROOMS BY MEMBERS OF THE STUDENT BODY.

All rooms are declared vacant May 1 of each year. On this date the reservation of rooms for the next college year begins. Students desiring to remain in the rooms that they have been occupying have that right provided they make application and sign the rental contract at the Registrar's office before May 8. After this date all rooms not reserved in this manner are open for assignment, on the days announced by the Registrar, to the members of the several classes in the following order: Juniors, Sophomores, Freshmen. Within the respective classes the order of choice and assignment is determined by lot conducted by the Registrar.

RESERVATION OF ROOMS BY NEW STUDENTS.

Rooms not reserved before May 15 will be available for assignment, in order of the applications, to new students desiring to enter College the following September. The Registrar will reserve rooms for such students by correspondence if he is informed, at least approximately, of the kind of accommodations desired and whether or not a roommate is wanted. A deposit of five dollars with the Registrar is required from every new student reserving a room, which deposit will be deducted from his first semester bill. The rental contract involved may be signed at any time before the opening of College. Applications for such reservations should be made as early as possible both for the purpose of securing a satisfactory

room and to relieve the rush at the opening in September.

DORMITORY ROOM FURNITURE.

All rooms are furnished by the occupants. Students graduating from College or changing from one room to another usually sell their furniture to the new occupants at a fair price mutually agreed upon. This plan is regarded highly desirable by the college authorities. The Finance Committee of the Board of Trustees has engaged a competent appraiser who has no direct interest in connection with the College to determine the value of the furniture in any room when asked to do so. When students are unable to agree on the price for the furniture in a room, this appraiser will serve as an expert to adjust the matter. Any failure to make an adjustment on the basis of the findings of the appraiser must be referred to the Committee on Dormitory Rooms for final action.

ROOM RENT.

The charge for room rent, including steam heat, is given below for each room in the above-mentioned dormitories, and covers the period commencing the Saturday before College opens in September and ending the Saturday after College closes in June, with the exception of the Christmas vacation. Because of the increased cost of fuel and of other expenses connected with the dormitories the room rents have been increased, beginning with September, 1920. The occupants of a room pay equal parts of the rental. Not more than two students are allowed to occupy one room or suite except in the case of some of the larger suites. In Pennsylvania Hall the designations are E for east division, M for middle divi-

sion, and W for west division. McK indicates McKnight Hall; C, Cottage Hall; F, Athletic Field House.

- \$22.00: 255, 256, C.
- \$24.00: 106, 108, W; 120, 122, E.; 357, 358, 360, C.
- \$26.00: 105, 107, W; 119, 121, 123, E.
- \$30.00: 353, 354, 362, C.
- \$32.00: 103, W; 125, E.
- \$34.00: 101, W; 127, E.
- \$38.00: 340, McK; 270, F.
- \$44.00: 111, 117, 118, M; 140, McK; 361-363, C.
- \$46.00: 104, W.
- \$52.00: 206, 208, 306, 308, 406, 408, W; 210, 410, M;
220, 222, 224, 320, 322, 324, 420, 422, 424, E.
- \$54.00: 205, 207, 305, 307, 405, 407, W; 219, 221, 223,
319, 321, 323, 419, 421, 423, E; 333, 334, 335, 336, 343,
344, 345, 346, McK.
- \$56.00: 153, 359, C.
- \$60.00: 240, McK.
- \$62.00: 337, 338, 341, 342, McK; 173, F.
- \$68.00: 204, 304, 404, W; 211, 217, M; 226, 326, 426,
E; 331, 332, 347, 348, McK.
- \$72.00: 202, 203, 302, 303, 402, 403, W; 225, 228, 325,
328, 425, 428, E.
- \$74.00: 201, 301, 401, W; 227, 327, 427, E; 157, 185 C;
273, 274, F.
- \$78.00: 257, 258, C.
- \$82.00: 154, C.
- \$88.00: 159, 160, 259, 260, C; 271, 272, F.
- \$96.00: 212, 218, 312, 318, 412, 418, M.
- \$100.00: 161, 162, C; 170, 171, F.
- \$104.00: 133, 134, 137, 138, 141, 142, 145, 146, McK.
- \$106.00: 251-253, 252-254, C.
- \$110.00: 411, 417, M; (suites of two rooms).
- \$118.00: 242 and 244, McK; 241 and 243, McK; 235
and 237, McK; 236 and 238, McK; (suites of two rooms).

\$124.00: 261-263, 262-264, C.

\$176.00: 233, 245, McK; (suites of three rooms).

Rooms 111, 117, 118, 212, 218, 312, 318, 411, 412, 417, 418, M, include a large study and a good-sized bedroom. Odd numbers are on the south side of the building in Pennsylvania Hall and on the west side of the building in McKnight Hall.

The cost of electric light, eighteen cents per week for each 40-watt Tungsten lamp or its equivalent, is charged on the regular College bills. Any damage done to a room will be charged up against the occupants. Only the Superintendent of Buildings and Grounds is allowed to change the locks on doors. The rooms must at all times be accessible to the college authorities. The occupants of a room will be held personally responsible for the order maintained in that room. Students disregarding Faculty or Student Council Dormitory Regulations will forfeit their rights as occupants. A janitress is employed by the College to clean thoroly and set to rights every student room in the dormitories periodically; this service is without cost to the students. The Registrar will be glad to furnish any additional information that may be desired about dormitory rooms as well as rooms in the homes of families living in the town.

STUDENT PROPERTY.

The College disclaims all responsibility for the care or safety of any property belonging to students. With the exception of furniture, mattresses, tacked-down carpets and window shades, any student property left in a dormitory room during the summer vacation must be securely packed in barrels or boxes distinctly marked with the owner's name and the number of his room. No property should be left in closets or bureau drawers. This is to insure against possible loss and to facilitate the cleaning of the rooms.

MATERIAL EQUIPMENT.

LIBRARIES.

The College Library contains about 25,000 volumes, besides numerous unbound pamphlets. It is a regular depository of the United States Government and the Government of the State of Pennsylvania. Several hundred volumes of public documents are annually received from these sources.

The Library is available to all students under established regulations. During term time it is open for consultation and the drawing of books eight hours each week day, except on Saturday, when it is open for four hours. The librarian and his assistants are always ready to aid the students. The opportunities for the use of the Library are continually being increased by means of a systematic organization and the building up of a complete and attractive library of reference.

Mrs. Edwin Swift Balch, of Philadelphia, has donated \$2,000 for the establishment of the "James Macfarlane Fund, Class of 1837", the annual income from which is expended in the purchase of books on geology and kindred subjects. Mrs. Balch is the daughter of James Macfarlane and established this endowment in his Alma Mater to commemorate the centenary of his birth Sept. 2, 1819, at Gettysburg. James Macfarlane received the degrees of A.B., M.A., and Ph.D., from Pennsylvania College. He was a member of the bar, an engineer, a geologist, and the author of several scientific books and many scientific articles.

In the same hall with the College Library are the Libraries of the two Literary Societies. They comprise a

large number of well-selected and standard volumes, which are annually increased thru the income of separate funds. The Philomathean Library contains at present 7,200 volumes; the Phrenakosmian Library over 7,850 volumes. These libraries are accessible to the members of the societies under their respective regulations, and are open for the issue of books on Wednesday at 4 P. M., and Saturday at 11 A. M., during term time.

READING ROOM.

The Reading Room is well supplied with daily and weekly papers and leading literary and scientific periodicals, thus enabling the student to become acquainted with current events and contemporary, scientific, literary, and other cultural movements.

LABORATORIES.

The Biological Laboratories on the second floor of Glatfelter Hall consist of two large, well-lighted, communicating rooms. They are supplied with twenty-five fine microscopes, and all the other appliances necessary in carrying on the work of the course outlined in the Department of Biology.

The Chemical Laboratories in the Chemical Laboratory Building, as described on page 138, are amply equipped with all the conveniences and apparatus and supplies that are desirable in the requirements for general and analytical chemistry, including work in organic preparations, proximate analysis, examination of water, and other special subjects.

The Physical Laboratory. The lecture room is provided with a large table with sink, water, gas, and electrical connections; apparatus supports, blackboard, charts, and black curtains and a hand-painted screen for stereopticon work. The laboratories, comprising six

rooms for general work, besides photographic dark rooms, store room, and storage battery room, and the lecture apparatus room are equipped with modern and carefully selected apparatus for both elementary and advanced work. Alternating and direct electric current is supplied at different points by means of a central switch board, a motor generator, and a storage battery. The apparatus includes a Geryk double cylinder oil immersion air pump, high grade balances, spectrometers, photometer, and stereopticon; and in electricity, D'Arsonval galvanometers, Wheatstone bridges, potentiometer, voltmeters, standards of resistance, capacity, electro-motive force, and self-induction, ammeters and voltmeters for direct and alternating currents (all of the best make); a complete dynamo and motor set illustrating different styles of direct and alternating current machines (induction, synchronous, three-phase, etc.); an induction coil giving an 8-inch spark, high frequency coils, electric wave apparatus, and telegraph, telephone, and wireless telegraph outfits, and Kathode ray and X-ray tubes.

ENGINEERING EQUIPMENT.

The equipment in the Engineering Departments is modern and adequate and is being augmented as necessity demands.

Instruction in mechanical drawing is given in a large room in Thaddeus Stevens Hall. The department is well equipped for the purpose and is supplied with drawings illustrating the best recent practice.

The surveying equipment is adequate for the purposes of practice in all kinds of surveying. It includes, besides a number of transits and levels, a plane table, traverse board, sextant, planimeter, level and stadia rods, tapes, etc.

The facilities for materials testing include a 100,000 pound Riehle universal testing machine, with the neces-

sary measuring instruments for the determination of the physical properties of steel, cast iron, wrought iron, timber, concrete, etc. There is also a cement laboratory, with a Riehle tensile briquette machine of 1,000 pounds capacity, and a variety of other apparatus for making all the standard physical tests of cement, sand, and mortar.

The pattern shop, located in a commodious room in the basement of Glatfelter Hall, is supplied with speed lathes and an oilstone grinder, also numerous benches and hand tools, all of the most modern type. In addition there has been provided foundry equipment of an elementary nature for illustrating the fundamental principles of moulding. The College has installed a medium-sized engine lathe, a drill press, emery wheels, and numerous vises and bench tools. A portable forge with the usual collection of small tools has been added.

Thru the courtesy of manufacturers in the vicinity of Gettysburg, arrangements have been made whereby students may spend a short time as apprentices in well-equipped machine shops. By such co-operation it is hoped that the students' knowledge of manufacturing processes will be increased to a greater extent than would be possible in a course of shopwork conducted entirely in a college laboratory.

An electrical engineering laboratory has been established. There are facilities for work in both direct and alternating current phenomena. The apparatus includes several direct current motors and generators, a rotary converter, a synchronous motor, several polyphase and single phase induction motors, a number of transformers, and an assortment of direct and alternating current measuring instruments.

In connection with the College heating and pumping plant there is available for commercial testing such equipment as boilers, a gas engine, and two pumps. As necessity demands further apparatus will be added.

MUSEUM.

The Museum contains varied collections of fauna and flora and minerals, all of which are freely used in instruction. The Mineralogical Cabinet contains over 6,000 specimens, including not only very full suites of the more common and more important minerals, but also good specimens of many of the rarer minerals. The collection in Lithology numbering 3,000 specimens, and of iron in Metallurgy, have, by recent additions, become fairly representative in the most important departments of these sciences. The Botanical collection of 6,000 specimens, mainly presented by Miss Elizabeth C. Morris, of Germantown, Pa., is well arranged and contains a full representation of American Flora. A beginning has been made of a Chemical Museum—to contain specimens of raw and manufactured materials in chemical industries. Friends of our institution can greatly aid us by making additions to these collections.

BUILDINGS.

Pennsylvania Hall, erected in 1836-38, was remodeled and improved in 1889. It contains eighty-six rooms for students, many of them *en suite*, so that those who may wish to do so can have separate study and sleeping rooms. In this building are also the Reading Room and the auditorium now used by the College Y. M. C. A. The rooms are all heated by steam and lighted by electricity. Sinks with running water are located on every floor, and on the first, second, and third floors are complete lavatories with hot and cold water connected with the College system of water-works.

McKnight Hall, erected in 1897, is a dormitory building of three stories accommodating about fifty students. It is named in honor of Harvey W. McKnight, D.D., LL.D., Class of 1865, Fourth President of the College. It is finished entirely in hard wood, is heated by steam,

lighted by electricity, has hot and cold water on each floor, and lavatories in convenient places. The first floor has eight rooms with spacious closets. These rooms may be used by one or two occupants, as preferred. On the second floor all rooms are *en suite*, each suite consisting of a study with one bedroom or two. These are also provided with closets. The third floor is divided into sixteen single rooms.

Cottage Hall was built in 1856 as a double house for professors. In 1914, because of the great need for more dormitory accommodations due to the increase in the number of students, it was transformed into a College dormitory of thirty rooms. As it is very advantageously situated on the campus near the main gateway, and is fitted up with all modern conveniences, rooms in this building are among the most desirable to be had.

Glatfelter Hall, erected in 1888-89, is used for general college purposes. It is named in honor of the late P. H. Glatfelter, of Spring Grove, Pa., a former trustee, who with his family has contributed largely to the College. On the first floor are the library and reference rooms, the Registrar's office, and recitation rooms. The second floor contains five recitation rooms, the biological laboratories, a drafting room, and a large Social Hall. A large museum and four recitation rooms are on the third floor. In the north wing of the third floor is the hall of the Philomathean Literary Society; in the south wing the hall of the Phrenakosmian Literary Society. In the basement are the laboratories of the Department of Physics with the recitation rooms directly above. The newly-equipped Engineering Laboratory and Shops occupy the entire north wing of the basement.

Thaddeus Stevens Hall, erected 1867-68, is a three-story brick building fronting on Carlisle street. It is heated by steam and lighted by electricity, and supplied with pure artesian water, hot and cold. On the first

floor are class rooms and the R. O. T. C. armory. The second and third floors are used exclusively as a dormitory for boys.

The Athletic Field House is situated on the north-east corner of the Athletic Field. This contains all the needed accommodations in the way of showers, hot and cold water, and so forth. The building is heated by steam and lighted by electricity.

The Brua Memorial Chapel, erected in 1889-90, is the gift of the late Col. John P. Brua, U. S. A., as a memorial to his parents. This building is used for daily prayers, for Commencement exercises, lectures and other occasions requiring a large audience room.

The Chemical Laboratory is a frame building, erected in 1872 and in 1890 converted to its present use. It contains on one floor a large lecture room, an office, store-rooms, chemical-room, balance-room, and three laboratories—providing for two hundred and sixty persons working individually. The building is fitted with the most approved appliances; gas and water at each desk; there are ample hoods, a water-distilling apparatus and large sand bath, and other necessary apparatus. The balance-room contains balances set on pillars especially built for the purpose. In the basement and in the attic are store-rooms. On account of the recent large increase in the number of students an addition to the Chemical Laboratory was built in 1916.

The Astronomical Observatory, erected in 1875, is furnished with an achromatic telescope having an object glass of six and one-half inches, with a transit instrument, chronometer, and other astronomical appliances.

The Gymnasium has on the first floor ample dressing rooms and bathing facilities, and a baseball cage. On the second, or main floor, a class of sixty members can be accommodated for gymnastic drill. This floor is partly enclosed for basketball purposes. The selection

of specialized apparatus in light and heavy gymnastics is varied and complete. The office, where all physical tests and measurements are taken, is also on this floor, and is furnished with a full set of anthropometric apparatus. The gallery has a good seating capacity for spectators.

The Gymnasium is open every week day from 10 A. M. to 10 P. M., and the time is apportioned between regular class practice, general practice, and games.

The Weidensall Y. M. C. A. Building is now under construction and it is expected that it will be ready for occupancy some time during the scholastic year 1920-1921. It is located immediately north of the Chemistry Laboratory and will be built of brick, colonial style. On the first floor the two main entrances, one from the east and the other from the west, will admit to a large and attractive lobby and reception room. Here students will meet for social intercourse and may entertain visiting members of their families and friends. Adjoining there will be a Ladies' Rest Room for the accommodation of women visitors. The College Reading Room, the Recreation Room, a kitchenette, and the Y. M. C. A. Office will be located on this floor. On the second floor there will be a commodious assembly room especially designed for prayer services and other religious meetings for students as well as the Bible Study Room, the Mission Study Room, a Committee Room, and living quarters for the resident Y. M. C. A. Secretary. The chief feature of the basement will be a swimming pool 20 x 60. There will also be a locker room, a shower room, a room for the heating and filtering plant, and a room for the attendant. There will be lavatories conveniently located on each floor. The building is named in honor of Robert Weidensall, LL.D., Class of 1860, and the cost of construction has been assumed by the Woman's League of Pennsylvania College.

The Boiler House supplies the steam required for heating all the College buildings.

Besides these buildings there are on the campus the President's house, four halls erected by Greek Letter Societies, and a house for janitors.

A professor's house, donated by Professor George D. Stahley, M.D., class of 1871, has been erected on College ground, corner of Carlisle and Stevens Streets.

Athletic Field. Immediately north of the College buildings is the athletic field, which is carefully graded and securely inclosed and covers an area of over seven acres. It affords room and facilities for all kinds of out-door sports. To the west of the field more than a dozen tennis courts have been laid out for the use of the students.

CLASS MEMORIALS.

As testimonials of their love for their Alma Mater and substantial tokens of gratitude for what she has done for them, the classes indicated below have donated memorials to her as follows:

Class of 1883. On the thirtieth anniversary of their graduation the members of this class donated \$500 to the College, the income from which is awarded annually, under the name of the Elinore Taylor Brewer Greek Prize, to that Sophomore who does the best work in the regular Greek class.

Class of 1893. On the twentieth anniversary of their graduation the members of this class presented the fine memorial gateway at the main entrance of the College campus. The approximate cost of this imposing and artistic structure was \$1500.

Class of 1899. On the fifteenth anniversary of their graduation the members of this class presented the furnishings of the class-room for the Department of Phi-

losophy and Education and a departmental library for that department. This equipment, costing nearly \$600, was presented as a Class Memorial to their class-mate, the Rev. Jacob Hiram Straw, who died on the African mission field.

Class of 1902. This class presented the College a concrete walk extending from the entrance into McKnight Hall to the driveway in front.

Class of 1906. This class gave a concrete walk that runs across the entire front of Pennsylvania Hall connecting the various entrances.

Class of 1907. This class paid for the wiring of all the halls and rooms of Pennsylvania Hall for electric light.

Class of 1912. This class erected the handsome light post in the center of the campus, with its cluster of five large electric light globes, and put down a concrete walk extending from this central point to Pennsylvania Hall, much of the actual labor being done by the members of the class.

Class of 1913. The gift of this class was a concrete walk which extends from Pennsylvania Hall to Glatfelter Hall connecting with the Gymnasium, and widening into a plaza in front of the entrance to Glatfelter Hall, with two handsome electric lamp posts on the two outer corners of the plaza. This class also put down part of the concrete walk in front of Thaddeus Stevens Hall.

Class of 1914. This class gave a concrete walk which reaches from the main gateway to the center campus light, together with three walks extending to Brua Chapel.

Classes of 1916 and 1917. These two classes presented a concrete walk reaching from Thaddeus Stevens Hall to the corner of Carlisle and Stevens Streets. All labor of putting down this walk was done by the members of these classes.

STUDENTS' INTERESTS.

LITERARY SOCIETIES.

Two literary societies are connected with the College, the Philomathean and the Phrenakosmian. These exert a remarkably favorable influence on the intellectual and social culture of their members. The exercises consist of essays, orations, debates, and music. The acquaintance with parliamentary law and the practice in clear thought and effective speech which are here gained, make these societies excellent schools in good citizenship. Each society has a spacious hall on the third story of Glatfelter Hall, conveniently and handsomely furnished. Their sessions are held every Friday evening. Every student should become an active member in one of these societies.

DEBATES AND ORATORICAL CONTESTS.

During the year there are debates between teams representing the different classes, also between teams of the literary societies. The College is also represented in the Intercollegiate Oratorical Union, being associated with Franklin and Marshall, Ursinus, Muhlenburg, and Swarthmore in an annual oratorical contest.

Y. M. C. A.

The Young Men's Christian Association of the College, the second one organized in the world, is an active agent in promoting religious interests among the students. Each Sunday morning and Thursday evening a public meeting is held, addressed by invited guests or students. Various Bible and Mission Study classes are organized

in college classes, fraternities, and other special groups. The Woman's League of Pennsylvania College are now conducting a campaign for the securing of \$50,000 towards the erection of a College Y. M. C. A. Hall to serve as a religious and social center for the student body. The corner-stone of this building was laid on Nov. 6, 1919, and every effort will be made to have it ready for occupancy in September, 1920.

LECTURES.

A series of free public lectures is delivered each year by members of the Faculty and others prominent in some field of general interest.

The Y. M. C. A. conducts at very reasonable cost a series of interesting lectures and musical entertainments. Occasional lectures or addresses by prominent men are delivered before the student body.

MUSICAL ORGANIZATIONS.

Active and well trained choral and instrumental musical organizations consisting of a band, an orchestra, a guitar and mandolin club, and a glee club, add to the pleasure of their members and of the audience at their public exhibitions. These clubs usually take a ten days' trip during the winter.

ATHLETICS.

The various college athletic sports, football, baseball, basketball, field sports and tennis, are well organized. They are recognized as an important part of college life and receive encouragement, but under such regulations as it is believed will prevent them from becoming a possible source of demoralization to the student body and from interfering with the primary work of the institution. The plan under which these sports are conducted gives

the opportunity and encourages every student to take part regularly in some out-door exercise.

Students are permitted to participate in any or all branches of athletics unless parents or guardians have notified the Faculty to the contrary.

PRESS CLUB.

The chief aim of the Press Club is to bring the various interests of the College before the public thru the daily papers.

PUBLICATIONS.

THE PENNSYLVANIA COLLEGE BULLETIN is published by the Faculty four times during the year:

"The Gettysburgian," under the control of the student body, is published weekly, and makes a specialty of College and alumni news. A room in McKnight Hall has been provided as an office for the editorial staff of the "Gettysburgian."

"The Y. M. C. A. Hand-Book," issued at the opening of each college year, gives valuable information and suggestions to incoming students.

"The Spectrum," an annual publication by the Junior Class, contains pictorial representations of the College with its various organizations and surroundings, and useful information about students and alumni.

All the periodicals aim at enlarging the means of communication between the College and its graduates, former students and friends. These enterprises are cordially commended to the patronage of those interested in the welfare of the institution.

STUDENT COLLEGE REPRESENTATIVES.

A Student entering Pennsylvania College of Gettysburg from another college is required to be registered as a

student here for a period of one calendar year before he is permitted to take part in intercollegiate athletics.

Any student whose work, reckoned from the beginning of the semester, is reported to the Faculty at any time during the semester as being below Grade D in two or more courses, will be debarred (as long as this condition exists) from representing the College in any student organization.

ADDRESSES OF ALUMNI.


The College is anxious to keep in touch with its alumni and ex-students not graduates, and requests that all changes in address be sent to the Registrar.

TEACHERS.

The attention of school boards, and others desiring teachers is called to the fact that it is frequently in the power of the Faculty to recommend suitable candidates. Many graduates successfully fill important positions in public and private institutions. The College course for teachers is arranged to meet the requirements of the School Code of Pennsylvania, thus securing the State Life Certificate for the graduates of the College. See page 78.

FORM OF BEQUEST.

I give, bequeath, and devise to "The Trustees of Pennsylvania College, of Gettysburg, in the County of Adams," in the State of Pennsylvania, and their successors and assigns forever, the sum of ——— (or shares in the bank of ———, or any other personal property or real estate, as the case may be), to be applied to the Endowment Fund of the Institution.

 A bequest to a benevolent corporation, to be legal, must be made, in Pennsylvania at least thirty days, and

in New York at least sixty days, before the death of the Testator; and should be signed by two witnesses not officially related to the College.

ALUMNI ASSOCIATIONS.

The Alumni Association of Pennsylvania College holds its regular annual meeting Wednesday afternoon of Commencement Week. In 1876 the Board of Trustees granted the Association the privilege of nominating six of their number to membership in the Board, and of maintaining this number as vacancies occur.

The officers of the association are:

President:

CHARLES J. FITE, '98Pittsburgh, Pa.

Secretary:

Dr. LOUIS S. WEAVER, '99York, Pa.

Treasurer:

EDGAR A. CROUSE, '03Gettysburg, Pa.

The various district alumni associations are active and potential factors in promoting the interests of the College and bringing the College to the notice of prospective students.

GETTYSBURG ACADEMY.

This is a boarding school offering a four year course for students preparing for college and also a general or academic course for students who do not expect to enter college. As a training school for boys Gettysburg Academy seeks to cultivate habits of neatness and punctuality as well as industry and accuracy in study. It attaches the greatest importance to the culture of the heart and to the development of those manly virtues that make the truly Christian gentleman. The location, equipment, environment and ideals of the school are favorable for such training.

HOME LIFE.

It is the purpose of those in charge to give every student a happy, healthful home life. The Masters live in the school with the boys and are intimately associated with them both in their work and in their play. The large Living Room with its cheerful fire-place and comfortable furnishings is the gathering place of the boys when not on duty. Here is cultivated the "family spirit" of the school.

THE MAIN BUILDING.

A fine new structure known as The Main Building is now completed and occupied. This building is of beautiful, Colonial architecture and fronts one hundred and fifty-six feet on Carlisle Street. Into its construction and equipment have gone the very best and latest ideas that science, sanitation and school experience can give. The building is heated by a vacuum steam system from

the central plant and lighted thruout by electricity. The plumbing is of the most approved sanitary design.

The first floor contains large, airy class-rooms, lavatory with hot and cold water supply, shower baths and a locker-room. There are also a number of rooms for students.

The second or main floor contains the large Living Room beautifully finished in Colonial style with an ample fire-place, tiled floor and comfortable furnishings. This provides a useful and delightful center for the school life. To the south of this is the large Chapel and Study Hall. Here are held the religious exercises, the literary society meetings and certain study periods. To the north is the Dining Hall with a capacity of one hundred boarders. Here the Masters and students take their meals together. On this floor is also the modern sanitary Kitchen equipped with the best devices and machinery for the preparation of food. The table is abundantly furnished with wholesome, well-cooked food fresh from the rich farming and fruit country of the vicinity. Only pasteurized milk and cream is served; only pure filtered water and manufactured ice is used. The excellence and cheapness of food supplies in Adams County make it possible to furnish a very good table at very low rates. Near the Living Room are the office of the Headmaster, the study-hall for girls who attend as day students, and a cozy reading room. The reading room is supplied with a large number of magazines and papers and is open every day for the use of the students.

The entire third floor contains rooms for the students and Masters. There are single and double rooms. On this floor there is another lavatory with hot and cold showers, drinking-font, and all modern toilet conveniences.

THADDEUS STEVENS HALL.

This building will be completely remodeled and converted into a modern dormitory during the coming summer. The Trustees have made a generous appropriation for this purpose. The second and third floors will be torn out and rearranged into large airy rooms, single and double, facing east and west instead of north and south as at present. This building will afford additional accommodations for twenty-four students and two Masters.

ADMISSION TO COLLEGES.

Gettysburg Academy is an accredited secondary school. All colleges admitting students by certificate accept its scholarship credits for entrance. This means that a student satisfactorily finishing a course at Gettysburg Academy will be admitted without examination to Pennsylvania College at Gettysburg or to any other first grade institution admitting by certificate.

COURSES OF STUDY.

There are two courses, the Classical (with Greek), and the Scientific or Academic (with French or Physics); for detailed description of these courses see the special Academy catalog.

STUDENT OUTFIT.

All the boys except day students from the local community are required to room and board in the school. Each student will need the following outfit: Bible, four sheets, three pillow-cases, pillow, blankets, spread, towels, bath-robe, napkins, napkin-ring, fountain pen, and laundry bag (marked G. A.) All articles to be sent to the laundry should be plainly marked with the student's name.

The rooms are furnished with single beds, springs, felt mattresses, study table, chairs, book-case, chiffonier and window shades. A large closet is provided for each occupant. The only furnishings to be supplied by the student are a rug (9 x 12) for the floor and an electric desk lamp with cord.

SCHOLARSHIPS AND AID FOR STUDENTS.

A limited number of service scholarships worth \$30 each are awarded annually to deserving students by the Finance Committee of the Board of Trustees. Applications for these scholarships must be made in writing and should state in full the reasons for the request. Such applications must be handed to the Headmaster before October 1 of the school year. The children of clergymen are allowed a reduction of one-half of the tuition, that is, \$37.50 each school year.

The Parent Education Society of the General Synod controls ten scholarships worth \$30 each annually which are open to young men preparing for the ministry in the Lutheran Church. Application for the use of these scholarships should be made to President John A. Singmaster, D.D., Gettysburg Theological Seminary, Gettysburg, Pa.

Rev. Sidney E. Bateman, M.D., Sc.D., Class of '87, of Philadelphia, Pa., has established an endowment fund of \$500, the income from which is awarded annually as a scholarship to some worthy and needy student preparing for the ministry in the Lutheran Church. Application for the use of this scholarship should be made to the Headmaster of the Academy.

EXPENSES.

The rate for boarding students for the full school year

is \$330 or \$360 or \$400 according to the size and location of the room selected. The school year is divided into two equal semesters as follows:

	Lowest Rate	Minimum Rate	Highest Rate
First Semester	\$165	\$180	\$200
Second Semester	165	180	200
Total	<hr/> \$330	<hr/> \$360	<hr/> \$400

The amount of each semester bill is payable in advance at the beginning of the semester. *In case of withdrawal or suspension no payment will be accepted for less than one-quarter of the fees for the school year. If the student withdraws or is suspended before the end of the first half of a semester he will receive a refund of one-half the amount he has paid for that semester.*

These charges cover tuition, board, furnished room, heat, electric light, pew rent, use of athletic field and tennis courts, gymnasium, library, reading room and athletic fees. The money received from the athletic fees (calculated at \$6 for each student) is administered by a committee composed of faculty and student members for the benefit of the athletic interests of the school. There are no *extra fees*. It will therefore be seen that the cost of a course in Gettysburg Academy is much less than in the great majority of secondary boarding schools offering the same first-class advantages of instruction and equipment.

Each student upon reserving a room is required to deposit \$5 which will be credited on his first semester bill. He must also deposit \$1 to insure return of keys and care of the school property. Students responsible for damage to the school or student property are expected to report the same to the Headmaster who will make an equitable adjustment. Damage not so reported will be charged to

the occupants of a room or in certain cases to the whole student body as circumstances may justify.

The tuition for day students is \$75 per school year including the athletic fee. The terms for payment are the same as for the boarding pupils.

The Academy catalog containing cuts of the buildings and detailed information will be mailed upon request to

THE HEADMASTER OF GETTYSBURG ACADEMY,
Gettysburg, Pa.

STUDENTS IN COLLEGE 1919-1920.

GRADUATE STUDENTS.

Non-resident.

Hollinger, Jacob Edward, Jr.	New Brunswick, N. J.
Hufford, Jane	Reading
Keckler, Grover Patterson	Altoona
Nye, Levi Benjamin	Harrisburg
Rosenberry, B. F. L.	Easton

Resident.

Christ, Bruce Levi	Pine Grove
Dippel, Harry Weber	Jersey City, N. J.
Duckstadt, Ida Dorothy	Gettysburg
Faust, Martin Luther	Ambler
Fisher, Nelson Franklin	Milton
Hilner, Howard Kauffman	Harrisburg
Knight, Grant C.	Gettysburg
Miller, George Reich	Harrisburg
Miller, Harman Frederick	Baltimore, Md.
Potter, Alexander Oberlander	Kitchner, Canada
Schoning, Arnt L.	Chicago, Ill.
Sieber, William Thomas	McAllisterville

SENIOR CLASS.

Class of 1920.

Candidates for the Degree of Bachelor of Arts.

P. Indicates Pennsylvania Hall; M. McKnight Hall; C. Cottage Hall; S. H. Stevens Hall.

	Group	
Baker, Caroline Maude ✓	2 Lancaster	109 York St.
Belknap, Carlyle Parks	3 Jamestown, N. Y.	260 C
Bingaman, Frank Warren	2 Esterly	312 P

Bousum,, Jacob St. Clair	1 York	227 P
Cadman, Eugene Etwell	2 Millville	Millville
Deardorff, Boyd Harold	1 Dillsburg	428 P
Elliott, William Nevin	2 Blue Ridge Summit	60 York St.
Garman, Walter Earl	1 Reisterstown, Md.	258 C
Hafer, Glenn Teeter	1 Chambersburg	402 P
Hildebrand, Clinton Frederick	1 York	111 P
Keller, Lloyd Monroe	1 Shrewsbury	428 P
Laird, Robert Malcolm	3 Huntingdon	Hanover
Lehn, John Henry	1 York	111 P
Miller, Guy Edward	1 Newville	219 P
Mummert, Lewis Jacob	1 Hanover	118 P
Neal, Clarence Arthur	1 Waynesboro	359 C
Peeling, James Hedley	2 Red Lion	261 C
Putman, Dwight Frederick	1 Somerset	325 P
Reynolds, Walter Daniel	3 Gettysburg	125 N. Washington St.
Robinson, Felix Griffin	1 Gettysburg	46 South St.
Rudisill, Harold Becker	2 Hanover	127 P
Schwartz, Perry Dean	2 York New Salem	203 P
Schwartz, Wayne Timalium	2 York New Salem	203 P
Shearer, John Dwight	3 York Haven	219 P
Shearer, Paul Bomberger	3 Shippensburg	222 P
Sheely, Edith Irene	2 Gettysburg	143 Springs Ave.
Stamm, Raymond Thomas	1 Milton	104 P
Sternat, Harry Wich	1 Towson, Md.	227 P
Stewart, Margaret Armstrong	2 Gettysburg	228 Baltimore St.
Stoner, Mildred Minerva	2 Gettysburg	129 Baltimore St.
Wagner, John Hoy	1 Pottsgrove	228 P
Waldkoenig, Arthur Christian	1 Baltimore, Md.	208 P
Worley, William Carson	1 Lititz	320 P
Yiengst, Kirby Mahlon	1 Myerstown	111 P

Candidates for the Degree of Bachelor of Science.

Adams, Harvey Raymond	6 Gettysburg	116 Chambersburg St.
Baker, George Bush	6 York	25 S H
Beckmyer, Grund Frederick	4 York	403 P
Browning, Ralph Avery	4 Myersville, Md.	236 M
Buck, Edward Hastings	5 Harrisburg	161 C
Buedinger, William Anton	4 Jersey City, N. J.	316 P
Cash, Truman Buckey	6 Westminster, Md.	105 P
Crissman, Lyall Nichols	7 Elkins, W. Va.	222 P
Diehl, John	6 Greencastle	320 P
Eberly, Seibert Durboraw	4 Chambersburg	150 C
Fellenbaum, Austin Habecker	6 Mt. Joy	341 M
Flenner, Albert Lawrence	4 Glen Mills	258 C
Gillette, Eugene Merle	7 Vineland, N. J.	354 C
Griest, Harold Mahlon	4 Philipsburg	129 N. Wash. St.
Hefflefinger, David Mitchell	4 Progress	338 M
Kattenhorn, Christian Chas.	4 Newark, N. J.	316 P
Menchey, Albert John	4 Gettysburg	63 High St.
Miller, Morell Waldo	5 Abbottstown	235 M
Miller, Percy Edwin	4 Chambersburg	146 M

Moyer, Clifford Zendt	6	Soudertown	342	M
Noon, Russell Alleyne	5	Listie	235	M
Rebuck, Walter Edgar	4	Shippensburg	226	P
Reen, Calvin Gilbert	7	Gettysburg	144	Spring Ave.
Scheffer, William Brooks	4	Harrisburg	338	M
Sharetts, John Lloyd	5	Gettysburg	34	Stevens St.
Sheely, Glenn Francis	4	Gettysburg	R D	7
Sherer, Clayton Miller	10	Manheim	207	P
Slanker, Harry Washington	4	Gordon	106	P
Spangler, Jacob Monroe	6	East Berlin	236	M
Widder, George McAllister	5	Harrisburg	117	Spring Ave.
Wolff, Charles Richard	6	Hanover	343	M
Yarrison, Byron W.	5	Montgomery	245	M
			Seniors,	66

JUNIOR CLASS.

Class of 1921.

Candidates for the Degree of Bachelor of Arts.

Group				
Albig, John William, Jr.	2	McKeesport	405	P
Carlson, Oscar Wilhelm	2	McKeesport	131	N. Wash. St.
Coble, Oliver Dewey	1	Williamson	411	P
Cook, Roderick Walker	2	Dillsburg	301	P
Cooper, Henry Bowman	3	Camp Hill	245	M
Dulebohn, George Roscoe	1	Mason-Dixon	316	P
Eichelberger, Percy Samuel	3	Gardners	204	Academy
Falkenstein, Elwood S.	1	York	306	P
Gresh, Levi David	3	Boyertown	416	P
Hershey, Charles Edward	1	York	221	P
Hoke, Franklin Levi	3	Harrisburg	161	C
Hollinger, Edith Deardorff	2	Gettysburg	R D	10
Holman, Edward Lee	3	Blain	401	Baltimore St.
Houser, John Raymond	1	Ruff's Dale	305	P
Kerchner, Adelaide Marion	1	Lineboro, Md.	218	N. Stratton St.
Klinefelter, Walter	1	Glen Rock	127	P
Lauver, Marie Nayetta	2	Altoona	Stevens	St.
Lerew, Joseph Austin	3	Dillsburg	26	S H
Lind, Ralph Winfield	1	Altoona	225	P
Livengood, William Potts	2	Birdsboro	327	P
Miller, Anna Harriet	2	Gettysburg	536	Baltimore St.
Myers, George Israel	1	Seven Valleys	411	P
Neff, Edgar Ralph	3	York	348	M
Power, Genevieve Agnes	2	Gettysburg	316	Baltimore St.
Redcay, Paul Irvin	1	Hanover	321	P
Shaulis, Samuel Sylvester	1	Somerset	319	P
Sheads, Ida Salome	2	Gettysburg	115	N. Stratton St.
Sheads, Robert Emory	3	Gettysburg	115	N. Stratton St.
Showe, Lawrence Martin	1	Mason-Dixon	228	P
Simpson, Lowell Vogel	2	Friedens	223	P
Woodward, Luther Ellis	1	Walnut	325	P

Candidates for the Degree of Bachelor of Science.

Baum, Paul Donkel	4	Lemoine	117 Springs Ave.
Beers, George Lisle	10	Indiana	354 C
Boath, William Frederick	4	Harrisburg	312 P
Bortner, Ralph Adam	4	Glen Rock	117 P
Briggs, Harold David	10	Johnstown, N. Y.	337 M
Davies, Lewis Watkin	7	Berlin, N. Y.	241 M
Emanuel, Daniel Victor	8	Harrisburg	336 M
Etsheid, Karl William	4	Lemoine	307 P
Harbaugh, Raymond Welty	4	Beuna Vista Springs	415 P
Hinman, Burton Louis	4	Westville, Conn.	133 M
Hurd, Mason Montraville	6	Williamsport, Md.	146 M
Jacobs, Norman Gephart	4	Somerset	117 Springs Ave.
Klingaman, Foster Ellis	4	Berwick	419 P
Lauver, William Wieand	5	Altoona	225 P
Lecrone, Edgar Henry	4	York	257 C
McCreary, Henry Clay	4	Indiana	241 M
McLane, William Oliver, Jr.	5	Frostburg, Md.	105 P
Miller, Carl Franklin	4	Juniata	135 N. Washington St.
Miller, Charles Kitzmiller	9	Gettysburg	536 Baltimore St.
Miller, Maurice Harry	4	Gettysburg	461 Baltimore St.
Mumper, Jacob Harold	9	Gettysburg	536 Baltimore St.
Mundorff, Roy McClellan	4	Gettysburg	Centre Square
Nicely, John Harris	4	Montoursville	218 P
Pfeffer, Fred George	4	Gettysburg	330 Baltimore St.
Rice, John Stanley	6	Arendtsville	145 M
Richards, James Smiley	9	Altoona	336 M
Shank, John Jay	4	Waynesboro	138 M
Shetter, Claire Alexander	6	York	26 S H
Starr, Allen Edward	7	Littlestown	245 M
Stauffer, Russell Deardorff	9	Gettysburg	133 E. Water St.
Trundle, Alfred Graham	5	Frederick, Md.	237 M
Weaver, William Greenberry	6	Gettysburg	261 Baltimore St.
Yohe, David Abraham	4	Gettysburg	18 Chambersburg St.
Zarr, Robert Rush, Jr.	4	Nanticoke	407 P
Ziegler, Earl Emerson	4	York	323 P

Juniors, 66

SOPHOMORE CLASS.**Class of 1922.****Candidates for the Degree of Bachelor of Arts.****Group**

Anderson, Matilda Hanna ✓	2	Atoona	218 N. Stratton St.
Bower, Philip	1	Table Rock	309 Baltimore St.
Brunstetter, Byron Curtis	1	Gettysburg	304 Baltimore St.
Brunstetter, Max Russell	2	Gettysburg	304 Baltimore St.
Dimpsey, Frank James	2	New Freedom	211 P
Doub, John Wilfred	1	Middletown, Md.	359 C
Drawbaugh, Certrude Elizabeth	2	Harrisburg	201 N. Wash. St.
Endres, Joseph Earl	1	Huntingdon	108 P
Floto, Norwood Shipley	2	Connellsville	160 C

*Flynn, Robert Lee	1	Washington, D. C.	302 P
Foulk, Paul Levi	1	Littlestown	28 S H
Fuhrman, Arthur Alphus	1	Hanover	125 P
Gardner, Glenn Markley	2	Gettysburg	154 York St.
Gobrecht, Loy Clinton	1	Hanover	412 P
Gotwald, David Etter Small	1	York	262 C
Guss, Walter Dimm	1	Philadelphia	401 P
Horne, Irwin Apple	3	Quakertown	107 P
Huber, Elizabeth Annan	2	Gettysburg	411 Carlisle St.
Keck, George Harold	1	West Newton	416 P
King, Paul Edward	1	Littlestown	410 P
Lawyer, Paul Ezra	2	Westminster, Md.	221 P
Little, John Harold	1	Hanover	319 P
Medsker, Ralph Hayden	2	Scottdale	210 P
Mertz, Walter Louis	1	Baltimore, Md.	41-43 S H
Minich, William Gordon	2	Loysville	421 P
Musselman, Mary Katherine	2	Fairfield	225 Springs Ave.
Nagele, Carl Robert	1	Conshohocken	416 P
Rice, Rueil Keedy Greitzner	3	Seven Stars	233 M
Riley, Loyal Thomas	1	Oakland, Md.	25 S H
Saas, William Herman	1	East Clarksburg, W. Va.	121 P
Saylor, Howard Melvin	3	Johnstown	218 P
Shumaker, Stella Barton	1	Gettysburg	28 Chambersburg St.
Spangler, Ruth Anna	2	Gettysburg	18 Chambersburg St.
Taylor, Miriam Daisy	2	Gettysburg	501 W. Middle St.
Weaver, Constance Cornelia	2	Gettysburg	66 W. High St.
Wertman, Roscoe Edwin	2	Bloomsburg	346 M
Willard, Pierce Main	1	Frederick, Md.	325 P
Wolf, Ruth Sheely	2	Westminster, Md.	201 N. Wash. St.
Zeiders, Ruth Viola	2	Gettysburg	204 Carlisle St.

Candidates for the Degree of Bachelor of Science.

Baker, Michael Daniel	4	Waynesboro	261 C
Bream, Henry Trostle	6	Gettysburg	Broadway
Brenneman, John	4	York	123 P
Burgess, Milton Valentine	5	Connellsville	131 N. Wash. St.
Daugherty, Frank Luther	6	Butler	134 M
Davis, Donald Glen	10	Newberry	335 M
Derr, George Harry	6	Lairdsville	33 S H
Erb, Lester Lynn	5	Philadelphia	41-43 S H
Fickinger, Charles Frederick	4	Sewickley	137 M
Gehauf, Herbert Hensey	4	Frostburg, Md.	360 C
Gentzler, Jennings Mason	4	York New Salem	206 P
Gibson, Joseph Wilbur	5	Indiana	360 C
Gingerich, Lester Earl	7	York	415 P
Hersh, Henry McClellan	6	New Oxford	146 M
Jacobs, Robert Llewellyn	4	Spring Grove	259 C
Keiser, Leon Paul	6	Mifflintown	158 C
Krebs, William Albert	9	Hanover	124 P
Kyle, James William, Jr.	6	Mifflintown	158 C
Leavy, John Peter	7	Harrisburg	312 P
MacInnes, James Allan	9	Greensburg	138 M
Mahaffie, Ralph	4	Renovo	157 N. Washington St.

*Died Feb. 17, 1920.

Martz, Harold Brehm	6 Harrisburg	332 M
Mathias, Robert Burns	5 Mt. Washington, Md.	205 P
McBride, Henry Ellsworth	4 Brunswick, Md.	328 P
McDonnell, John Henry	7 Gettysburg	140 E. Middle St.
McDowell, James Waddell	4 Butler	335 M
McGaughy, John Alexander	9 Gettysburg	R D 4
Miller, Charles Douglas, Jr.	5 Pottsville	143 M
Miller, Elder Edward	6 Homer City	233 M
Mumma, Elsie	6 Hummelstown	305 N. Stratton St.
Noll, Paul Edward	7 Gettysburg	45 S H
Olinger, Paul Francis	10 Hanover	122 P
Overmiller, Howard Andrew	6 Spring Grove	326 P
Oyler, Robert Monroe	4 Gettysburg	218 York St.
Panebaker, David Edward	4 Hanover	420 P
Pegg, Edwin Larue	4 Bloomsburg	224 P
Reller, Louis Smith	5 Pittsburgh	134 M
Rittase, Ralph Adolphus	4 Hanover	117 P
Ruder, Carl Letsig	5 Mt. Pleasant	201 P
Rudisill, Donald Everett	7 Altoona	427 P
Rudisill, John Calvin	7 Littlestown	154 C
Ryder, Charles Franklin	4 Chambersburg	404 P
Sahm, Russell Luther	7 Mahaffey	425 P
Seaman, Lloyd Miller	6 Stone Harbor, N. J.	334 M
Sheffer, John Allen	4 Spring Grove	119 P
Sieling, Charles Small	5 Railroad	153 C
Skidmore, Charles Alfred	10 Gettysburg	Lincoln Ave.
Smith, Roger Barrick	4 Thurmont, Md.	419 P
Spangler, George William	6 Harrisburg	332 M
Stewart, Joseph Baird	7 Philadelphia	406 P
Wagner, Charles Shakespear	10 Harrisburg	117 Springs Ave.
Weaver, Leonard Ray	10 Pottsgrove	408 P
Winebrenner, LeRoy Hartzel	9 Gettysburg	783 Baltimore St.
Wolfe, Edgar Leroy	10 Dillsburg	301 P

Sophomores, 93.

FRESHMAN CLASS.

Class of 1923.

Candidates for the Degree of Bachelor of Arts.

Group

Bartow, Hazel Kathryn	2 Punxsutawney	Stevens St.
Clare, Richard Henry	2 Gettysburg	243 York St.
Cole, John Irvin	1 State College	403 P
Diehl, William Clarence	1 Clear Spring, Md.	303 P
Eshenour, Theodore Wilbur	1 Harrisburg	363 C
Ford, Charlotte Kathryn	2 Pillow	209 N. Washington St.
Frank, Irene	2 Gettysburg	31 Water St.
Geiselman, Robert Clare	1 Gettysburg	414 E. Middle St.
Geiser, Dixon Hoover	2 Pen Mar	261 C
Gnagey, Robert Boose	1 Berlin	422 P
Hafer, Merle Bowers	1 Chambersburg	404 P
Hamsher, Reuben Harold	1 Fayetteville	401 P
Hanks, Edgar Burnell	1 Friedens	223 P

Hesser, Harvey Allan	2 Pine Grove	39 S H
Kadel, Emma Susan ✓	2 Gettysburg	415 W. Middle St.
Mahaney, George Thomas	1 Sparrows Point, Md.	
	157 N. Washington St.	
McAllister, Walter Ginder	2 Manheim	347 M
—Millard, Oscar Benjamin	2 Mt. Carmel	242 M
Naus, Alford Raymond	1 Berwick	202 P
—Pickering, Leonard	1 Bayonne, N. J.	423 P
Redcay, Mark Snoddy	1 Hanover	324 P
Roth, Lorene Marian	2 Gettysburg	Broadway
Sachs, Harry Willis	1 Harrisburg	360 C
Schoffstall, Emanuel Martz	3 Tower City	254 C
—Schwartz, George Philip	1 York	111 P
—Schwartz, William Maine	1 York New Salem	32 N. Stratt'n St.
Sebold, Charles Earl	1 Dayton, Ohio	304 P
—Sharar, Earl Franklin	1 Newport	137 M
Simon, Carl Robert	1 Hagerstown, Md.	328 P
—Steinour, Laura Marie ✓	1 Gettysburg	24 Baltimore St.
Stueber, Fredrick	1 Pittsburgh	38 S H
—Troup, Leslie Minick	1 Newport	332 M
—Tucker, Edith Medora ✓	2 Bayonne, N. J.	209 N. Wash. St.
—Webner, Harvey Walter	1 Harrisburg	220 P
—Young, Henry Beck	1 Hagerstown, Md.	108 P
—Zerbe, Calvin Lee	2 Pine Grove	39 S H

Candidates for the Degree of Bachelor of Science.

—Albright, Curtis M.	4 Brodbecks	118 P
Altland, Noah Lavere	10 York	240 M
Ambrose, Anthony Michael	4 Lebanon	331 M
Beckmeyer, David Edward	4 York	403 P
Brininger, Robert Gilchrist	4 Harrisburg	42 S H
—Brown, Herbert Donald	9 Mechanicsburg	162 C
Buehler, Guyon Edwards	6 Gettysburg	249 Carlisle St.
Cofrances, Ernest Lewis	6 West Haven, Conn.	42 S H
Dahmen, Carl Lloyd	6 Jamestown, N. Y.	260 C
—DeNapoli, Frank Anthony	9 Dover, N. J.	28 S H
Diehl, William Harold	4 Rockport, Ind.	420 P
—Dollman, Warren Andrew	5 Eyer's Grove	34 S H
—Enders, George William 3rd	6 York	407 P
—Emmert, L. de Forest Ashman	10 Chambersburg	344 M
—Everhart, Ralph Raymond	4 York	240 M
—Fickinger, William Tressler	6 Sewickley	137 M
Fink, Walter John	4 York	233 M
—Frock, Jerome Wayne	7 Harrisburg	254 C
—Gaudian, Martin Ferdinand	6 New Britain, Conn.	42 S H
—Gilliland, James Patterson	6 Gettysburg	239 Carlisle St.
—Gingrich, Roy Mark	9 Palmyra	424 P
—Glenn, James Donald	5 Fairfield	253 Chambersburg St.
—Grimm, Henry Jacob	10 Harrisburg	358 C
—Gundel, Walter Peter	4 Columbia	426 P
Haehnlen, Frederick Philip	4 Harrisburg	337 M
Hartley, Robert Clinton	7 Gettysburg	301 Carlisle St.
Hill, Walter Henry	5 Hughesville	412 P
—Hinebaugh, Mahlon Carleton	5 Oakland, Md.	48 South St.
Hinman, Elmer Stephen	4 Westville, Conn.	133 M

—Hollinger, Charles Raymond	4	Gettysburg	R D 10
Howard, Charles Harold	5	Gettysburg	Carlisle St.
Hughes, Charles Glenwood	6	West Chester	126 P
—Johnson, Paul	6	Dover, N. J.	27 S H
—Jones, John Edward	7	Dover, N. J.	28 S H
Kressler, Clemuel L.	6	Bloomsburg	224 P
Lady, Harold Roy	10	Gettysburg	R D 10
—Lightner, George Heim	4	Loysville	46 S H
—Matsushita, James Shin	10	Tokio, Japan	24 S H
Moul, Clayton Edward	4	Menges Mills	204 P
Myers, Calvin Reuben	7	Lewistown	154 C
Myers, Peter Wesley	9	York	157 C
—North, Edward Herbert	7	West Haven, Conn.	42 S H
Ott, Minter Morrell	4	Johnstown	302 P
Overmiller, Matthew Stanley	4	East Prospect	358 C
Page, Wayne Reyner	4	Clarion	34 S H
—Pancoast, Elizabeth Gillingham	4	Salem, N. J.	27 Stevens St.
—Polack, Robert Freaner	7	Hagerstown, Md.	426 P
Ports, Earl George	10	Hanover	412 P
Quigley, Richard Samuel	4	Harrisburg	253 C
Rice, Ray Edward	4	Seven Stars	259 C
—Robinson, Ralph Carleton	7	Gettysburg	46 South St.
—Rocha, Paulo Teixeira	7	Rio de Janeiro, Brazil	
—Sheely, William Clarence	6	Gettysburg	143 Springs Ave.
Shelley, Paul Webster	5	Mechanicsburg	262 C
Shetter, Glenwood Benjamin	10	Gettysburg	R D 7
—Shoenberger, Alden Kresge	8	Pottsville	348 M
Shue, Norman Elwood	4	Glennville	117 P
—Shultz, Orlo Miller	7	McKnightstown	
—Skidmore, Scott Osbern	7	Gettysburg	Lincoln Ave.
Sloat, Charles Allen	4	Orrtanna	Orrtanna
Smith, Richard Manges	5	York	308 P
Snader, John Milton	4	Connellsville	29 S H
Snyder, Franklin Lloyd	10	Martinsburg	424 P
Sowers, Lowell Martin	4	Clearspring, Md.	303 P
—Steinour, Harold Heiges	4	Gettysburg	24 Baltimore St.
Stoner, Clarence Emmanuel	10	Gettysburg	129 Baltimore St.
Stover, Ralph Hays	4	Gettysburg	114 W. High St.
—Stroud, Leo Archibald	10	Dover, N. J.	27 S H
Struble, George Stanley	7	Connellsville	
—Teerkas, Earl William	7	Kane	345 M
Toms, Oscar Ray	6	Boonsboro, Md.	363 C
Uhler, Romaine Thompson	6	Jefferson, Md.	423 P
Walter, Luther Brooke	7	Reading	308 P
Waltz, George Frederick	6	West Chester	126 P
Way, Winston Burdette	9	Bridgeport, Conn.	253 C
—Weigel, Harry Milton, Jr.	4	Harrisburg	145 M
Wise, Richard John	4	Hanover	125 P
—Withers, Edward Dixon	9	Dallastown	424 P
Wolf, Spurgeon Louis	9	Reisterstown, Md.	206 P
Woods, David Walker, Jr.	9	Gettysburg	R D 4
Worcester, Norman Lewis	6	Butler	345 M
Zinn, Chester Allen	9	York	157 C
—Zweifel, Arthur Harrison	9	Harrisburg	162 C

Freshmen, 119.

PARTIAL COURSE STUDENTS.

Albert, Porter DeRussey	DuBois	304 P
Baker, Ralph Earnest	Altoona	347 M
Bange, Fred Ports	Hanover	321 P
Beagle, Taylor McKinley	Berwick	202 P
Bickell, Ernest Mathias	Hyndman	219 P
Blocher, Charles Huber	Gettysburg	Carlisle St.
Bright, Atmore Dowlin	Norristown	336 M
Brown, Carl Cresswell	Greensburg	142 M
Buchanan, Walter Neal	DuBois	242 M
Buhrman, Samuel Ross	Rouzer ville	415 P
Eberly, Harry Bell	Chambersburg	159 C
Erhard, William Melanchthon	Juniata	357 C
Floto, D. Guy	Meyersdale	159 C
Gilbert, Paul Steck	Potts Grove	
Gülck, Georg Krohn	Aalborg, Denmark	30 S H
Hacker, Raymond Colby	Philadelphia	
Haldeman, Ward Franklin	Pine Grove	118 P
Henderson, Chalmer Cecil	Warrior's Mark	
Houtz, Harold Adam	Harrisburg	143 M
Howard, Francis Dorsey	Frederick, Md.	333 M
James, Clair Raymond	Hanover	204 P
Jensen, Jacob Roed	Aalborg, Denmark	30 S H
Kelly, Allen Wilber	Taneytown, Md.	28 S H
Lambert, Lahman Daniel	Surrey, N. Dak.	200 E. Middle St.
Linn, Hubert Miller	Rockwell, N. C.	120 P
Mantia, Mario Francis	Brooklyn, N. Y.	44 S H
McCollough, George Thomas	Butler	226 P
McKeone, Francis	Phoenixville	342 M
Minnich, Mary Susan	Dallastown	209 N. Washington St.
Mumma, Richard Good	Steelton	334 M
Myers, Philip Trone	Westminster, Md.	233 M
Phillips, Samuel Ellenberger	Harrisburg	201 P
Plowman, Walter Schmucker	Hanover	127 P
Porterfield, Hubert Lester	Hagerstown, Md.	222 P
Rings, William Refus	Amlin, Ohio	239 N. Washington St.
Schaeffer, Benjamin Bernhard	Utica, N. Y.	45 S H
Ziegler, William Detwiler	Honey Brook	425 P
		Partial, 37.

SPECIAL STUDENTS.

Fisher, Nelson Franklin	Milton	104 P
Ishida, Nobuo	Tokio, Japan	24 S H
Myers, Janet	Marion	154 York St.
Rice, Mary Elizabeth	Arendtsville	Arendtsville
Rosenstengel, Bettie K.	Gettysburg	Broadway
Slifer, Naomi Grace	St. Thomas	St. Thomas
Stewart, Donald McLean	Gettysburg	228 Baltimore St.
		Special, 7.

STUDENTS IN THE ACADEMY.

SENIOR CLASS.

Alleman, Benson Suesserot
 Bertolet, Nathan Evans
 Buck, Donald Waite
 Bush, Horace Edgar
 Clutz, John Jacob
 Combs, William
 Congleton, Vernon Jerome
 Englehart, Charles Clayton
 Glading, Albert Grevveson
 Gohn, Herman Franklin
 Governale, Samuel Lentine
 Grimm, Emma Hermine Louise
 Hansen, Christian Max
 Heindel, Norman Hadley
 Menges, David Alvin
 McIlhenny, Elizabeth Lott
 Miller, William Harold
 Quintanilla, Luis, Jr.
 Ridder, John Edward
 Schenck, Charles Edward
 Stallsmith, Ruth Virginia
 *Toms, Oscar Ray
 Waybright, Walter Ernest
 Waybright, Howard David
 Wolf, John Henry

Gettysburg
 Glen Moore
 Warrior's Mark
 Lemoyne
 Gettysburg
 Mulberry, Ind.
 Brooklyn Park, Md.
 Accident, Md.
 Philadelphia
 Harrisburg
 Chicago, Ill.
 Gettysburg
 Philadelphia
 Gettysburg
 Menges Mills
 Gettysburg
 Grantsville, Md.
 Mexico City, Mex.
 Gormanian, W. Va.
 Butler
 Gettysburg
 Boonsboro, Md.
 Littlestown
 Gettysburg
 Westminster, Md.
 Seniors, 25.

UPPER MIDDLE CLASS.

Albers, William Henry
 Borleis, John Henry August
 Borleis, Harry Frederick
 Boyles, Robert Clay
 Bream, Walter Robert
 Counsel, Charles Albert
 Curran, George Jacob
 Diehl, Madeleine Weaver
 *Erhard, William Melanchthon
 Gearhart, James Harvey
 Greer, Charles Asbury
 King, Charles Frederick
 Laird, George Densmore
 Leach, Charles Franklin
 Martin, Aaron James
 Millard, Burton John
 Nicoll, William Stewart, Jr.
 Nipple, Thomas Henry
 Overmiller, Roy Allen

Jersey City, N. J.
 Raspeburg, Md.
 Raspeburg, Md.
 Piedmont, W. Va.
 Gettysburg
 Laquin
 Felton
 Gettysburg
 Juniata
 Blue Ridge Summit
 Johnstown
 Baltimore, Md.
 Trenton, N. J.
 Lemoyne
 Gettysburg
 Mt. Carmel
 Allentown
 Clinton, Ohio
 East Prospect

Overmiller, Elwood Stuart
 Petersen, Louis Walter
 Plank, Clyde Anthony
 Pyle, Ralph Frederick
 Taylor, Darrell
 Weaver, Thomas Erdman
 Irvin, Norman David

East Prospect
 Racine, Wis.
 Table Rock
 Somerset
 Laquin
 Macungie
 Gettysburg
 Upper Middlers, 26.

LOWER MIDDLE CLASS.

Asper, Maybelle
 Baker, Ira Young
 Barclay, Kenneth Bradley
 Delap, John Milton
 Foltz, Paul Engle
 Forrest, Anna Louise
 Forsythe, Myrtle Jane
 Gilbert, Richard Blocher
 Grecht, William
 Greenwood, Norman Bramley
 Harden, Marshall Frederick
 Hasenfuss, Gustav Charles
 Hidalgo, Miguel
 Hollinger, Albert, Jr.
 Kershner, Alan Motter
 Kimport, Adam Felty
 Lott, William McIlhenny
 Martin, Rudolph David
 McNaul, Robert Wayne
 Merva, Andrew Joseph
 Quintanilla, Antonio
 Reeps, Charles Arthur
 Smith, Henry Philip
 Swartz, Clarence Leroy
 Swope, Lawrence LeDane
 Waybright, Clarence Jacob
 White, Dallas Wayne
 Williams, Glenn Wightman

Aspers
 Gettysburg
 Sinnamahoning
 Gettysburg
 Deodate
 Gettysburg
 Orrtanna
 Littlestown
 Baltimore, Md.
 Philadelphia
 Arlington, Md.
 Philadelphia
 Mexico City, Mex.
 Gettysburg
 Pittsburgh
 Spring Mills
 Gettysburg
 Nanticoke
 Juniata
 Nanticoke
 Mexico City, Mex.
 Philadelphia
 Baltimore, Md.
 Littlestown
 Gettysburg
 Gettysburg
 Orrstown
 Mt. Carmel
 Lower Middlers, 28.

JUNIOR CLASS.

Barclay, Charles Frederick
 Braemer, Robert Walter
 Bryde, Eugene Francis
 Coates, David
 Grimm, Gisela Adele
 Heindel, Eleanore Ireland
 Herbert, George Paul
 Jensen, Haakon
 *Swope, Lawrence LeDane
 Warnsman, Frederick Henry, Jr.

Sinnamahoning
 Haddonfield, N. J.
 Secane
 Westmont, N. J.
 Gettysburg
 Gettysburg
 Hazleton
 Philadelphia
 Gettysburg
 Baltimore, Md.
 Juniors, 10.

*Entered after the publication of the 1918-1919 catalog.

Total enrollment, 85.
 Name repeated, 1.

SUMMARY.

Number of Students in College 1919-1920.

Graduate Students	17
Seniors	66
Juniors	66
Sophomores	93
Freshmen	119
Partial Course	37
Special Students	7
<hr/>	
Collegiate Department	405
Academy Department	88
<hr/>	
	492

COMMENCEMENT 1919.

Salutatory.

Martin Luther Faust.

Commencement Orator.

William C. SproulGovernor of the State of Pennsylvania

Valedictory.

Donald Fisher Lybarger.

GRADUATES.

Bachelor of Arts.

John Adam Apple
Ralph Wolf Baker
Minnie May Bortner ✓
Paul Russell Clouser
Herman Zinn Drawbaugh
Martin Luther Faust
Elwood Martin Grove
Ivan Henry C. Hagedorn
Ralph Lee Hankey
Howard Kauffman Hilner
Ralph Singleton Huffer
Curvin Franklin Kopp
Donald Fisher Lybarger
John Milton McCollough

Harman Frederick Miller
John Bringman Miller
Robert Sheridan Miller
Ruth Olinger Mock
William Harold Redcay
Mary Elizabeth Rice ✓
✓ Frederick John Schmidt
Raymond Clayton Shindler
William Thomas Sieber
Ralph Edward Stine
Earl Kresge Stock
✓ William J. B. Stricker
✓ Wade Earl Stonesifer
Roy LaVerne Yund

As of the class of 1918
Verl Eugene C. Snider (post obit.)

Bachelor of Science.

David Blocher	Ralph Ziegler Oyler
James Alexander Brenneman	John Earl Plank
Bruce Levi Christ	Alexander Oberlander Potter
✓ Harry Weber Dippel	Haydn Plank Reinecker
Samuel Alexander Gilliland	Alice Martin Rea ✓
Wilfred LeCron Harbaugh	Maurice Charles Stallsmith
Mahlon Artman Hartley	Frederick Michael Stambaugh
Carroll Richter McDonnell	Frederick William Sunderman
George Reich Miller	John Casper Wohlfarth

As of the class of 1918

Charles S. Montgomery (post obit.)

Edmund Emanuel Power

HONORS AND PRIZES.**GENERAL FINAL HONORS.**

Ralph Edward Stine

HIGHEST CLASS HONORS.

Harry Weber Dippel

CLASS HONORS.**Senior.**

Bruce Levi Christ	Ralph Singleton Huffer
Martin Luther Faust	Donald Fisher Lybarger
Ivan Henry Carl Hagedorn	Robert Sheridan Miller
Ralph Lee Hankey	William Harold Redcay

Junior.

Frederick Warren Bingaman	Clarence Arthur Neal
John Henry Lehn	James Hedley Peeling
Margaret Virginia Morgart	Margaret Armstrong Stewart

Sophomore.

Levi David Gresh

John Stanley Rice

Adelaide Marion Kerchner

Edith Irene Sheely

DEPARTMENTAL FINAL HONORS IN GREEK.

Ralph Edward Stine

GRAEFF PRIZE IN ENGLISH.

William Thomas Sieber

With Honorable Mention of

Herman Zinn Drawbaugh

Alice Martin Rea

BAUM MATHEMATICAL PRIZE.

Roy McClellan Mundorff

GARVER LATIN PRIZE.

Robert Franklin Bortner

Naomi Grace Slifer

Ruth Anna Spangler

BREWER GREEK PRIZE.

Robert Franklin Bortner

With Honorable Mention of

William Harold Redcay

GARVER GREEK PRIZE.

Paul Edward King

With Honorable Mention of

Robert Lee Flynn

MUHLENBERG FRESHMAN PRIZE.

Robert Franklin Bortner

PRIZES IN DEBATE.**First Prize.**

Howard Kauffman Hilner

Ralph Edward Stine

William J. B. Stricker

Second Prize.

Robert Lee Flynn

George Claire Herting

Pierce Main Willard

HONORARY DEGREES.**CONFERRED AT COMMENCEMENT 1919.****Doctor of Divinity.**

Rev. Stanley BillheimerNorwood, Pa.

Rev. Robert D. ClareBaltimore, Md.

Rev. Lauritz LarsenWashington, D. C.

Doctor of Laws.

Morris L. ClothierPhiladelphia, Pa.

Prof. J. A. FaulknerMadison, N. J.

Doctor of Literature.

Rev. Luther M. KuhnsOmaha, Neb.

Master of Arts.

Prof. J. N. GemmilGlen Rock, Pa.

Rev. E. H. MuellerBeatrice, Neb.

INDEX.

	Page.
Absences, Rules Governing	113
Academy, Gettysburg	147
Accounting, Course in	79
Admission:	
Rules Governing	20
Requirements for	21, 25
Advanced Standing	23
Admission Subjects in Detail ..	25
Advanced Standing, Admission to ..	23
Advanced Degrees, 1919	168
Advisers, Class	112
List of	16
Advisers, Group	112
Aid for Students	122
Algebra	88
Alumni Associations	145
American Government and Politics ..	81
Anatomy and Physiology	83
Anglo-Saxon	60
Astronomy	89
Astronomical Observatory	138
Athletics, General Statement ..	143
Athletic Council, Members	17
Athletic Field	140
Athletic Field House	138
Attendance, Rules	113
Bacteriology, Sanitation and	85
Banking, Course in Money and ..	78
Baum Mathematical Prize	121
Bequest, Form of	145
Bible: Courses in English Bible ..	72
Biblical Literature	72
New Testament Study	63
Bills, Tuition and Fees	125
Biology, Chemistry and Physics	
Group (V)	45
Biology and Hygiene:	
Courses of Instruction	82
Admission Requirements	36
Biological Laboratory	133
Board of Trustees:	
List of Members and Officers ...	8
Standing Committees	9
Boarding Clubs	126
Brua Chapel	138
Buildings	136

	Page.
Buildings and Rooms, Gettysburg	
Academy	147
Business Law	79
Business Organization	86
Calculus	89
Calendar	2, 3
Chapel Services	113
Church Services	113
Class Advisers	112
Class Honors	120
Class Memorials	140
Cement Testing	95
Chemistry and Physics Group (IV) ..	41
Chemistry:	
Courses of Instruction	85
Admission Requirements	29
Chemical Laboratory	133, 138
Christian Evidences	73
Civil Engineering Group (VII) ..	52
Civil Engineering Courses	96
College Dormitory Rooms	127
College Fees and Tuition	125
Commencement, 1919	165
Commerce and Finance	
Group (VI)	49
Committees:	
Of Board of Trustees	9
Of the Faculty	16
Comparative Government	82
Comparative Philology	71
Conditions and Deficiencies	116
Constitutional Law	82
Contracts and Specifications	98
Cottage Hall	137
Council, Athletic, List of Members ..	17
Council, Student	112
List of Members, 1919-1920 ...	18
Courses of Instruction	59
Courses of Study in Gettysburg	
Academy	149
Deficiencies, Rules Governing ..	116
In Admission	23
Degree Master's	118
Degrees Conferred in 1919:	
Bachelor's	165-166
Honorary	168
Master's	168

	Page.		Page.
Department Honors	120	Finance, Public	79
Descriptive Geometry	94	French:	
Deutscher Verein	62	Courses of Instruction	67
Dormitory Buildings	136	Admission Requirements	28
Rooms, Rent, Charges, etc. ..	129		
Dupont Scholarship	123		
		General Information	112
Economics	78	Geography: Admission Require-	
Education, Courses in	77	ments	26
Electives, Rules Governing	116	Geology	87
Elective Subjects for Admission ..	21	German:	
Electric Lights in Dormitories ..	131	Courses of Instruction	60
Electrical Engineering Group (X) ..	55	Admission Requirements	28
Electrical Engineering		Gettysburg Academy	147
Courses	94, 101	Gettysburg, Location of	7
Electricity, Courses in	95, 101	Glatfelter Hall	137
Electrical Machinery	101	Grades, Method of Designation ..	117
Electives	116	Graduates, List, 1919	165
Elinore Taylor Brewer Greek		Graduation, Requirements for ..	118
Prize	122	Graeff Prize	121
Embryology	84	Greek and Latin Group (I)	32
Employees, List of Officers and ..	13	Greek:	
Employment for Students	124	Courses of Instruction	62
Engineering Courses:		Admission Requirements	27
General Statement	93	Elementary Courses for Stu-	
Civil and Municipal Engineering ..	96	dents in Groups I and II ..	62, 63
Mechanical Engineering	99	Greek Prize	122
Electrical Engineering	101	Group System of Courses	31
Engineering Equipment	134	Gymnasium:	
Engineering Fees	126	Courses of Instruction ..	85, 115
Engineering Library	103	Equipment	138
English Bible Courses	72		
English, Courses of Instruction ..	59	Hassler Latin Prize	121
Admission Subjects	25	Heat Power Engineering	100
English and American Literature ..	59	Highways, Course in	98
English History	73	Histology	84
Entrance Requirements:		Historical Sketch of the College. .	4
General Statement	21	History and Political Science	
Subjects in Detail	25	Group (III)	38
Requirements for Separate		History:	
Groups	32-58	Courses of Instruction	73
Equipment of the College	132	Admission Requirements	29
Ethics	75	Roman Constitutional History. .	66
Evidences of Christianity	73	History of Philosophy	75
Examinations, Rules	116	History of Education	77
Expenses; Estimated for one year ..	126	Honorary Degrees Conferred, '19, 168	
In Gettysburg Academy	150	Honors, Rules Governing	
		Award of	119
Faculty: List of Members	10	Honors and Prizes, List, 1919 ..	168
Committees	16	Honor System	24
Fees, Tuition and Expenses	125	Hydraulics	98
Gettysburg Academy	150	Hygiene, Personal and Public ..	85
		Inspection Trips for Engineers ..	103

	Page.		Page.
International Law	82	Modern Language Requirements	22
Instructors	10	Money and Banking, Course in ..	78
Italian Course	71	Muhlenberg Freshmen Prize	120
Kinematics	99	Municipal (Sanitary) Engineering Group (VIII)	52
Laboratories: Equipment	133	Museum	136
Fees	126	Musical Organizations	143
Labor Problems	80	National Resources	82
Latin and Modern Language Group (II)	35	New Testament Study in Greek ..	63
Latin:		Officers, Lists:	
Courses of Instruction	64	Board of Trustees	8
Admission Requirements	27	Faculty	10
Lectures	66	Student Council	18
Law: International	82	Alumni Association	146
Business Law	79	Oratorical Contests	142
Constitutional Law	82	Organic Chemistry	86
Roman Law	66	Outline of Groups	32
Lectures:		Partial Course Students	24
Faculty, and Y. M. C. A.	143	Pennsylvania Hall	136
Lectureships	92	Philology, Comparative	71
Library: General Statement	132	Philosophy Courses	74
Of Literary Societies	132	Physical Culture	85, 115
Of Engineering	103	Physical Laboratory	133
Linguistic Science	71	Physics:	
Literary Societies	142	Courses of Instruction	90
Logic	74	Admission Requirements	30
MacFarlane, James, Fund	132	Physiology, Anatomy and	83
Machine Design	100	Political History of Europe	73
Masonry	98	Political Science Courses	81
Master's Degree:		Power Plant Design	101
Requirements	118	Prescribed Subjects for Admission	21
Material Equipment of College ..	132	Presidents of the College	
Materials Testing	95	1832-1920	6
Mathematical Physics	91	Press Club	144
Mathematical Prize	121	Prizes: General Statement	120
Mathematics:		List of Awards, 1919	166
Courses of Instruction	88	Property of Students	131
Admission Requirements	26	Psychology	74, 76
McKnight Hall	136	Publications	144
Mechanical Engineering Group (IX)	55	Public Finance	79
Mechanical Engineering Courses ..	99	Public Speaking	60
Mechanical Drawing Courses ...	94	Railroads, Course	97
Admission Requirements	29	Reading Room	133
Mechanics	94, 99	Records, Grades, etc.	117
Memorials of Classes	140	Re-examinations	116
Military Credits	111	Religion, Philosophy of	76
Military Science and Tactics:		Report of Student's Record	118
General Statement	104	Requirements for Admission	21
Courses of Instruction	106	Requirements for Graduation....	118
Mineralogy	87		

	Page.		Page.
Roman History	66	Special Students	24
Roman Law	66	List, College 1919-20	153
Roman Constitutional History ..	66	List, Gettysburg Academy	163
Rooms: Assignment	127	Student Council	112
Rental Rates	129	List of Members, 1919-20	18
Samuel Garver Greek Prize	122	Students' Interests	142
Samuel Garver Latin Prize	122	Student Property	131
Sanitation and Bacteriology	85	Student Publications	144
Sanitary Science	85	Surveying	96
Sanskrit	72		
Scholarships and Aid for		Teachers: Note on Preparation	
Students	122	for Teaching	145
Semester Hour Defined	31	Terms and Vacations	113
Seminaries:		Thaddeus Stevens Hall	137
Civil Engineering	99	Treasurer's Bills	125
Electrical Engineering	102	Trigonometry	88
Mechanical Engineering	101	Trustees, Board of	S, 9
Physics	92	Tuition and Fees, College	125
Sewerage	99	Gettysburg Academy	150
Shopwork	99		
Sociology	75	Unit Defined	21
Spanish Courses	69	Vacations	113
Special Students	24		
Statics and Dynamics	94	Water Supply Engineering	99
Structural Design and Drafting .	97	Weidensall Y. M. C. A.	139
Stuckenberg Lectureship in			
Sociology	92	Y. M. C. A.	139, 142
Students:		Zoölogy, Courses	83
Partial Course	23	Admission Requirements	30



	Starting Time	Finishing Time	Elapsed Time
me	9:48	9:49:35	<u>11:35</u>
Jan	9:49	10:20	<u>11:20</u>
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Martens			<u>11:46</u>
Byler	10:20		<u>12:14</u>
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Catalog Number

REGISTER FOR 1920-1921

Announcement of Courses for 1921-1922

Gettysburg, Pa.

Pennsylvania College of Gettysburg
Founded in 1832

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No. 1

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Congress July 16, 1904.

CALENDAR FOR 1920-1921-1922

Session days are indicated by bold-face type.

1920.

September							October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13	5	6	7	8	9	10	11
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25
26	27	28	29	30	24	25	26	27	28	29	30	28	29	30	26	27	28	29	30	31	..
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1921.

January							February							March							April							
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May							June							July							August						
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September							October							November							December						
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4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10
11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17
18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24
25	26	27	28	29	30	..	23	24	25	26	27	28	29	27	28	29	30	25	26	27	28	29	30	31
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1922

January							February							March							April						
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8	9	10	11	12	13	14	5	6	7	8	9	10	11	5	6	7	8	9	10	11	2	3	4	5	6	7	8
15	16	17	18	19	20	21	12	13	14	15	16	17	18	12	13	14	15	16	17	18	9	10	11	12	13	14	15
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May							June							July							August						
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7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
28	29	30	31	..	..	..	25	26	27	28	29	30	..	23	24	25	26	27	28	29	27	28	29	30	31	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	31	..	..	..	..	..	..	..	..	..	..	..	..

COLLEGE CALENDAR--1920-1921-1922.

1920.

September 13, 14 ... Monday and Tuesday, Entrance Examinations.
 September 15 Wednesday, 11 A. M., College Year begins.
 September 15 Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 25 Thanksgiving Day. Holiday.
 December 8 Monday, 1.30 P. M., Mid-Winter Meeting of
 Board of Trustees in Harrisburg.
 December 22 Wednesday, 1 P. M. Christmas Recess begins.

1921.

January 5 Wednesday, 8 A. M., Christmas Recess ends.
 February 22 Washington's Birthday. Holiday.
 March 24 Thursday, 1 P. M., Easter Recess begins.
 March 30 Wednesday, 8 A. M., Easter Recess ends.
 April 7 Founders' Day.
 May 18 Wednesday, Latin Examination for Hassler
 Prize.
 May 23 to 28 Monday to Saturday, Senior Final Examinations.
 May 30 Decoration Day. Holiday.
 May 31 to June 6... Saturday to Monday, General Final Examinations.
 June 5 Sunday, 10.45 A. M., Baccalaureate Sermon.
 June 5 Sunday, 7 P. M., Discourse before Y. M. C. A.
 June 6 Monday, 8 P. M., Concert by Combined Musical Clubs in Brua Chapel.
 June 7 Monday and Tuesday, Entrance Examinations.
 June 7 Tuesday, 9 A. M., Annual Meeting of Board of Trustees in Gettysburg.
 June 7 Tuesday, 10 A. M., Senior Class Day Exercises.
 June 7 Tuesday, 3 P. M., Alumni Class Reunions.
 June 7 Tuesday, 4 P. M., Baseball Game on Nixon Field.
 June 8 Wednesday, 10 A. M., Commencement Exercises.
 June 8 Wednesday, Noon, Alumni Collation.

Summer Vacation.

August 30 Tuesday, 8 A. M., Course in Surveying Begins.
 September 19, 20 ... Monday and Tuesday, Entrance Examinations.
 September 21 Wednesday, 11 A. M., College Year begins.
 September 21 Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 24 Thanksgiving Day. Holiday.
 December 5 Monday, 1.30 P. M., Mid-Winter Meeting of
 Board of Trustees in Harrisburg.
 December 21 Wednesday, 1 P. M., Christmas Recess begins.

1922.

January 5 Thursday, 8 A. M., Christmas Recess ends.
 January 30 to Monday to Saturday, Examinations closing
 February 4 First Semester.
 February 4 Saturday, 1 P. M., First Semester ends and
 Second Semester begins.
 April 13 Thursday, 1 P. M., Easter Recess begins.
 April 19 Wednesday, 8 A. M., Easter Recess ends.
 June 14 Wednesday, Commencement.

HISTORICAL.

The Charter of Pennsylvania College was approved April 7, 1832. The opening paragraphs are as follows:

"WHEREAS, the literary and scientific institution in Gettysburg, Adams County, in this Commonwealth, known by the name of Gettysburg Gymnasium, is resorted to by a large number of young men from different portions of this State, and elsewhere, and promises to exert a salutary influence in advancing the cause of liberal education; therefore,

"SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, That the Gettysburg Gymnasium be, and hereby is erected into a College, for the education of youth in the learned languages, the arts, sciences and useful literature.

"SECTION 2. And be it further enacted by the authority aforesaid, That the style and title of said College shall be 'Pennsylvania College of Gettysburg' and that it shall be under the management, direction and government of all the subscribers to the funds of said institution, by whose private contributions the said funds have been raised and its present edifice purchased, to wit: John B. McPherson, Thomas C. Miller, Thomas J. Cooper, Samuel Fahnestock, Samuel S. Schmucker, Ernest L. Hazelius, David F. Schaeffer, John G. Morris, Benjamin Kurtz, William Heim, Charles P. Krauth, Frederick D. Schaeffer, J. George Schmucker, J. F. Heyer, Jacob Martin, Abraham Reck, William Ernst, Jacob Medtard, Lewis Eichelberger, Michael Meyerheffer, Jonathan Ruthrauff, Jacob Crigler, John F. Macfarlane, Robert Goodloe

Harper, John Herbst, and their successors, to be elected as hereinafter mentioned."

The College in a large measure grew out of the necessity of properly preparing men for the Theological Seminary, established in 1826 at Gettysburg. This purpose has never lessened, and to-day the institution regards this as an important feature of its work and offers special opportunities to young men preparing themselves for theological studies. Pennsylvania College in its beginnings and its history is closely identified with the Lutheran Church.

The College began without endowment, with one small building (now a residence on the south-east corner of Washington and High streets), and a small attendance. But the wholesome enthusiasm of its able instructors, the loyalty and self-sacrifice of its officers, students, and alumni, and the devotion of its friends, have made its history down to the very present one of steady and continuous growth. To-day Pennsylvania College is rated as a college of the highest grade by the United States Bureau of Education and of the Department of Education of every State in the United States. Her graduates are admitted to all graduate and professional schools without examination.

Following is a list of the Presidents of the College from its foundation to the present time:

1832-34, Samuel S. Schmucker, D.D., Founder.

1834-50, Charles Philip Krauth, D.D., First President.

1850-68, Henry L. Baugher, D.D., Second President.

1868-84, Milton Valentine, D.D., LL.D., Third President.

1884-1904, Harvey W. McKnight, D.D., LL.D., Fourth President.

1904-10, Samuel G. Hefelbower, Ph.D., D.D., Fifth President.

1910-, William A. Granville, Ph.D., LL.D., Sixth President.

LOCATION.

Gettysburg is situated in the beautiful rolling area of the red shale belt of Pennsylvania, with its ridges of intrusive rock. A few miles west is the South Mountain ridge of the Blue Mountains. The situation is healthful, and there is a good supply of filtered water. The town is readily reached from all directions by the Philadelphia & Reading and the Western Maryland Railways, which connect at Harrisburg, Pa., and Baltimore, Md., with the great railway systems of Pennsylvania and the South. Washington, Baltimore, Harrisburg, York, Hagerstown, Chambersburg, Carlisle, and other important centers are also connected with Gettysburg by unusually good roads, making it a very important automobile tourist center. The Coast to Coast Lincoln Way passes through Gettysburg.

The historic association of Gettysburg with the Civil War gives the locality great additional interest. The events of the Battle of Gettysburg are recorded in inscriptions on about fourteen hundred monuments and one thousand markers, many of these being of large size and of great artistic merit. The United States Battlefield Commission has made the field accessible by over forty miles of very fine avenues, along which are the markings that show the battle lines. Miles of the rifle pits and other intrenchments have been preserved, as well as scores of lunettes. Here also is the National Cemetery where Lincoln made his memorable dedicatory speech. Among the thousands of travelers visiting the field are many men of national prominence who often speak to the student body. Such surroundings develop a love of our united country and inspire to better citizenship.

The college buildings were all used as hospitals during and after the Battle of Gettysburg; and the Fiftieth Anniversary of the Battle of Gettysburg Commission had its headquarters on the campus, July 1-4, 1913.

BOARD OF TRUSTEES.

Elected.

1890.	HON. SAMUEL McC. SWOPE*	Gettysburg
1890.	WILLIAM H. DUNBAR, D.D.*	Baltimore, Md.
1892.	THOMAS C. BILLHEIMER, D.D.*	Gettysburg
1893.	JOHN WAGNER, D.D.*	Hazleton
1896.	JOHN B. McPHERSON, Esq.	Boston, Mass.
1897.	WILLIAM A. SHIPMAN, D.D.*	Johnstown
1898.	HENRY C. PICKING	Gettysburg
1899.	CHARLES F. STIFEL	Pittsburgh
1899.	HENRY H. WEBER, D.D.	York
1902.	CHARLES BAUM, M.D., Ph.D.	Philadelphia
1906.	SAMUEL G. HEFELBOWER, Ph.D., D.D.	Carthage, Nl.
1907.	MARTIN H. BUEHLER	Baltimore, Md.
1907.	HON. R. WILLIAM BREAM	Gettysburg
1907.	FREDERICK H. BLOOMHARDT, M.D.	Altoona
1907.	ALPHEUS EDWIN WAGNER, D.D.	Gettysburg
1908.	WILLIAM L. GLATFELTER	Spring Grove
1908.	FRANK E. COLVIN, Esq.	Bedford
1908.	JOHN F. DAPP	Harrisburg
1908.	GEORGE B. KUNKEL, M.D.	Harrisburg
1908.	JACOB A. CLUTZ, D.D., LL.D.	Gettysburg
1910.	WILLIAM A. GRANVILLE, Ph.D., LL.D.	Gettysburg
1910.	CHARLES J. FITE	Pittsburgh
1910.	BURTON F. BLOUGH	Harrisburg
1912.	CHARLES H. BOYER	Chicago, Ill.
1913.	HON. LUTHER A. BREWER	Cedar Rapids, Ia.
1914.	FREDERICK H. KNUBEL, D.D., LL.D.	New York, N. Y.
1914.	PERCEY D. HOOVER, M.D.	Waynesboro
1915.	LESLIE M. KAUFFMAN, M.D.	Kauffman's
1915.	HARVEY C. MILLER	Philadelphia
1916.	JOHN B. McALISTER, M.D.	Harrisburg
1917.	JEREMIAH ZIMMERMAN, D.D., LL.D.	Syracuse, N. Y.
1918.	LOUIS S. WEAVER, M.D.	York
1919.	E. CLARENCE MILLER	Philadelphia

Officers.

JOHN F. DAPP	President
HON. SAMUEL McC. SWOPE	Vice President
HENRY C. PICKING	Secretary and Treasurer

*Designated as Alumni Trustees, having been elected on nomination by the Alumni Association.

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	Term Expires
MARTIN H. BUEHLER, Chairman	1925
THOMAS C. BILLHEIMER, D.D.....	1924
HENRY C. PICKING.....	1923
JACOB A. CLUTZ, D.D., LL.D.....	1922
WILLIAM L. GLATFELTER.....	1921
JOHN F. DAPP	Ex-officio
WILLIAM A. GRANVILLE, Ph.D., LL.D.....	Ex-officio

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FREDERICK H. KNUBEL, D.D., LL.D., Chairman
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WILLIAM ANTHONY GRANVILLE, Ph.D. (Yale),
LL.D. (Lafayette)
President

3 Campus

JOHN ANDREW HIMES, Litt.D. (Dickinson)
Professor Emeritus of English Literature and Political Science
130 Carlisle St.

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D.D. (Dickinson)
Dean and Pearson Professor of Latin
145 Lincoln Ave.

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Ockershausen Professor of Chemistry and Mineralogy
227 Carlisle St.

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Professor Emeritus of Biology and Hygiene
300 Carlisle St.

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Headmaster and Professor of Latin in Gettysburg Academy
411 Carlisle St.

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228 Carlisle St.

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135 Broadway

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Professor of Physics
225 Lincoln Ave.

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Amanda Rupert Strong Professor of English Bible and Professor
of History

143 Springs Ave.

SIVERT NIELSEN HAGEN, Ph.D. (Johns Hopkins)
Graeff Professor of English

29 Stevens St.

ALBERT BILLHEIMER, Ph.D. (Princeton)
Franklin Professor of Greek

251 Springs Ave.

FRANK H. CLUTZ, Ph.D. (Johns Hopkins)
Burton F. Blough Professor of Civil Engineering

159 Broadway

RUDOLPH ROSENSTENGEL, M.M.E., (Cornell)
Professor of Electrical and Mechanical Engineering

59 York St.

EUGENE MONELL BAXTER, A.M. (Aix), Ph.D., LL.D.
(Franklin)

Professor of Romance Languages

20 E. Middle St.

CAPTAIN SHELBY MASON TUTTLE, Infantry, U. S. A.
Professor of Military Science and Tactics and Commander Re-
serve Officers' Training Corps (R. O. T. C.)

117 Carlisle St.

C. LEE SHILLIDAY, M.S. (Ohio Univ.)

Dr. Charles H. Graff Professor of Biology

Kendlehart Apts.

ARNOLD V. JOHNSTON, A.M. (Univ. of Minn.)
Professor of Economics and Political Science

24 Baltimore St.

RICHARD A. ARMS, Ph.D. (Univ. of Pa.)

Alumni Professor of Mathematics

143 Springs Ave.

THE FACULTY

11

CLYDE BELL STOVER, A.M. (Pennsylvania)

Assistant Professor of Chemistry

24 E. Lincoln St.

FRANK H. KRAMER, Ph.D. (Univ. of Pa.)

Assistant Professor of Education

133 N. Washington St.

JAMES ALLEN DICKSON, A.M. (Pennsylvania)

Instructor in Chemistry

263 Springs Ave.

GRANT C. KNIGHT, A.B.

Instructor in English and Public Speaking

165 Carlisle St.

GEORGE REICH MILLER, B.S.

Instructor in Physics

Room 245 McK.

HORACE GILBERT BECKER, A.B.

Assistant in Economics and French

209 N. Washington St.

PERRY DEAN SCHWARTZ, A.B.

Assistant in Mathematics

Water St.

CALVIN GILBERT REEN, B.S.

Assistant in Engineering

144 Springs Ave.

BOYD HAROLD DEARDORFF, A.B.

Assistant in French

Room 306 G. A.

RAYMOND THOMAS STAMM, A.B.

Assistant in English Bible

Room 51 Seminary

CHRISTIAN CHARLES KATTENHORN, B.S.

Laboratory Assistant in Chemistry

Room 318 P.

JOHN LLOYD SHARETTS, B.S.

Laboratory Assistant in Chemistry

34 Stevens St.

HENRY WOLF BIKLE, A.M., LL.B. (Univ. of Pa.)

Lecturer on Constitutional Law

Philadelphia

REV. EDWIN HEYL DELK, D.D.
Stuckenberg Lecturer on Sociology

Philadelphia

DOYLE REVERE LEATHERS, B.S.
Senior Master and Instructor in Mathematics in Gettysburg
Academy

Room 314 G. A.

WILLIAM THOMAS SIEBER, A.B.
Master in English and History in Gettysburg Academy
Room 317 G. A.

FELIX GRIFFEN ROBINSON, A.B.
Master in French and Latin in Gettysburg Academy
Room 205 G. A.

CLARENCE ARTHUR NEAL, A.B.
Master in Greek in Gettysburg Academy
Room 26 Stevens Hall

DAVID ELIAS MAXWELL, A.B.
Master in Physics in Gettysburg Academy
218 Baltimore St.

PERCY SAMUEL EICHELBERGER
Master in Geography and Arithmetic in Gettysburg Academy
Room 33 Stevens Hall

KARL W. ETSHEID Room 307 P.

RAYMOND W. HARBAUGH Room 207 P.

JOHN J. SHANK Room 138 P.

CARL F. MILLER 135 N. Washington St.
Student Laboratory Assistants in Chemistry

FOSTER E. KLINGAMAN Room 428 P.

ROY MacC. MUNDORFF Center Square

MARIE N. LAUVER 113 Broadway

GEORGE L. BEERS Room 260 C.

Student Laboratory Assistants in Physics

RUSSEL D. STAUFFER
Student Assistant in Shop Work

133 E. Water St.

WILLIAM ANTON BUEDINGER
Student Assistant in German

316 P.

ADDITIONAL OFFICERS AND EMPLOYEES.

EDWARD SWOYER BREIDENBAUGH, Sc.D.
Curator of Museum

227 Carlisle St.

THE FACULTY

13

GEORGE DIEHL STAHLEY, A.M., M.D.
Medical Director

300 Carlisle St.

KARL JOSEF GRIMM, Ph.D.
Librarian

228 Carlisle St.

REV. MILTON H. VALENTINE, D.D.
Chaplain

143 Springs Ave.

HENRY C. PICKING, A.M.
Treasurer

Office, 16 Center Square

CLYDE B. STOVER, A.M.
Registrar and Secretary of the Faculty

24 E. Lincoln St.

DOYLE REVERE LEATHERS, B.S.
Athletic Director

Room 314 G. A.

MISS SALLIE P. KRAUTH
Assistant Librarian

3 Baltimore St.

MISS MARY HAY HIMES, A.M.
Assistant Librarian

130 Carlisle St.

MISS RACHEL GRANVILLE
Secretary to the President

3 Campus

FIRST SERGEANT RICHARD J. RYAN, Infantry, U. S. A.
Assistant in Military Science and Tactics

418 York St.

LUTHER ELLIS WOODWARD
Chief Proctor, Pennsylvania Hall

Room 211 P.

JOSEPH EARL ENDRES
Proctor in McKnight Hall

Room 340 McK.

RALPH WINFRIED LIND
Assistant Proctor in Pennsylvania Hall

Room 407 P.

PENNSYLVANIA COLLEGE

GEORGE LISLE BEERS
Proctor in Cottage Hall

Room 260 C.

WILLIAM POTTS LIVENGOOD
Custodian of Reading Room

Room 325 P.

ROGER BARRICK SMITH
Assistant to Registrar

Room 428 P.

JOHN B. HAMILTON
Superintendent of Buildings and Grounds
128 Washington St.

HOMER R. BUOHL
Engineer

132 Water St.

EDWARD BARBEHENN
Watchman

218 N. Stratton St.

MRS. B. P. STARNER
Stewardess in Gettysburg Academy
Room 106 G. A.

S. FRANKLIN WETZEL
Engineer in Gettysburg Academy
48 Stevens St

MRS. S. FRANKLIN WETZEL
Matron in Gettysburg Academy
48 Stevens St.

JOSEPH CARVER
Janitor
4 Campus

MERVE CARVER
Janitor
4 Campus

MRS. M. S. YOHE
Janitress
207 Chambersburg St.

JACOB ROED JENSEN
Assistant Engineer

Room 20 G. A.

COMMITTEES OF FACULTY.

Class Advisers.

PROFESSOR STAHLEY, Senior Class
PROFESSOR SANDERS, Junior Class
PROFESSOR PARSONS, Sophomore Class
PROFESSOR BREIDENBAUGH, Freshman Class

Entrance.

GRIMM, BIKLE, CLUTZ, STOVER, ARMS

Library.

GRIMM, GRANVILLE

Bulletin.

HAGEN, PARSONS, ARMS, BAXTER
GRANVILLE, Ex-officio

Hour Schedule.

BREIDENBAUGH, GRIMM

Students' Publications.

SANDERS, HAGEN, VALENTINE

Supervision of Finance of Student Organizations.

KRAMER, SANDERS, JOHNSTON

College Discipline.

SANDERS, BIKLE, STAHLEY, VALENTINE, PARSONS

Lectures.

BIKLE, ROSENSTENGEL, JOHNSTON

Advanced Degrees.

GRIMM, BIKLE

Representative on Athletic Council.

VALENTINE

PENNSYLVANIA COLLEGE

Supervision of Social Functions.

BILLHEIMER, KRAMER

Student Employment.

GRANVILLE

Student Organizations.

BREIDENBAUGH, BAXTER

Dormitory Rooms.

PARSONS, PICKING, STOVER

Supervision of Musical Clubs.

CLUTZ

Electric Service.

ROSENSTENGEL

ATHLETIC COUNCIL.

MILTON H. VALENTINE

Faculty Representative, President

DOYLE REVERE LEATHERS, '13

Athletic Director, Vice-President

CLARENCE A. NEAL, '20

Graduate Athletic Manager, Secretary

ARTHUR E. RICE, '04

Alumni Representative, Treasurer

GEORGE W. NICELY, '01

Alumni Representative

GEORGE R. DULEBOHN, '21

Student Representative

DANIEL VICTOR EMANUEL, '21

Ex-officio, President of the College Athletic Association

JOHN F. DAPP, ex-'89

Ex-officio, President of the Board of Trustees

WILLIAM A. GRANVILLE

Ex-officio, President of the College

STUDENT COUNCIL 1920-21.

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President

PAUL I. REDCAY, '21

Vice-President

WALTER H. HILL, '23

Recording Secretary

JAMES W. KYLE, Jr., '22

Corresponding Secretary

SAMUEL S. SHAULIS, '21

Treasurer

F. E. REINARTZ, '24

Messenger

EARL E. ZIEGLER, '21

C. L. RUDER, '22

RALPH MAHAFFIE, '22

CARL L. SIMON, '23

ADMISSION.

Applicants for admission are required to present evidence of a good moral character. Students coming from other schools must present certificates of good standing and regular dismissal from the institutions which they have left. No distinctions are made as to sex, except that only male students are admitted to the college dormitories. Women students may secure first-class accommodations in the town with good families and at very reasonable rates by writing to the Registrar.

METHOD OF ADMISSION.

The method of admission is either by examinations or by certificates from approved secondary and high schools or from approved private instructors. Such certificates should state the amount of work done and the time spent on each subject, together with the grades received. *The official forms for certificates*, which may be had on application to the Registrar, *should be used in all cases*, in order to insure the presentation of the necessary information for the Entrance Committee which passes on all applications for admission. These certificates should be filled out and returned to the Registrar as early as possible before the opening of the college year. Entrance examinations are held on the Monday and Tuesday preceding the opening of the college year and on the Monday and Tuesday of Commencement Week.

REGISTRATION.

Every student must call on the Registrar at the opening of college, obtain a Registration Card and attend to the details connected with his registration in accordance with the instructions given. An extra fee of \$2.50 will

be charged to all who do not complete their registration within ten days after the issue of the registration card.

When a student has registered in a given group of studies he may not change to another group except by Faculty approval which must be obtained within the first thirty days of the first semester.

REQUIREMENTS FOR ADMISSION.

The scholarship requirement for admission to the Freshman Class is thoro preparation in fifteen units of work in an approved secondary school. A *unit* of work in any subject is the amount of work that may be done in a standard secondary school in a year of thirty-six weeks, with five recitation periods of forty-five minutes each, per week.

PRESCRIBED SUBJECTS FOR ADMISSION.

Of these fifteen units required for admission, the following *seven and a half* are required of all candidates:

English	3* units
One Foreign Language	2 units
Mathematics	
A. Algebra	1½ units
B. Plane Geometry	1 unit

ELECTIVE SUBJECTS FOR ADMISSION.

To make up the total of fifteen units the candidate for admission may offer any of the following (under the conditions stated in connection with each Group of College studies, pages 30-55) :

Greek.

- | | |
|---|---------|
| A. Grammar and four books of Xenophon..... | 2 units |
| B. Composition, three books of Homer, and sight translation | 1 unit. |

* As the first English work in the high school or preparatory school course is largely grammar, the credit granted in English is one unit less than the number of years of work in this subject.

Latin.

- A. Grammar and four books of Caesar2 units.
 B. Composition and six books of Cicero1 unit.
 C. Six books of Vergil1 unit.

German.

- One to three years1 to 3 units.

French.

- One to three years1 to 3 units.

Spanish.

- One to three years1 to 3 units.

Mathematics.

- C. Solid Geometry $\frac{1}{2}$ unit.
 D. Plane Trigonometry $\frac{1}{2}$ unit.

Mechanical Drawing.

- One year $\frac{1}{2}$ or 1 unit

History.

- United States $\frac{1}{2}$ or 1 unit.
 England $\frac{1}{2}$ or 1 unit.
 Ancient $\frac{1}{2}$ or 1 unit.
 Medieval $\frac{1}{2}$ or 1 unit.

Geography, Political and Physical $\frac{1}{2}$ or 1 unit.**Chemistry.**

- One year with laboratory work1 unit
 One year without laboratory work $\frac{1}{2}$ unit.

Physics.

- One year with laboratory work1 unit.
 One year without laboratory work $\frac{1}{2}$ unit.

Botany.

- One year with laboratory work1 unit.
 One year without laboratory work $\frac{1}{2}$ unit.

Zoölogy.

- One year with laboratory work1 unit.
 One year without laboratory work $\frac{1}{2}$ unit.

ADDITIONAL SUBJECTS.

Certificates will be accepted in Civics, Astronomy, Geology and General Science; also in Commercial Arithme-

tic, Commercial Law and Economics, Commercial Geography, Shorthand, Bookkeeping, and Public Speaking when offered for admission to the Commerce-Finance Group, these not to exceed a total of 3 units; also in Manual Training, and Shop Work (to count not more than half a unit in each case) when offered for admission to any of the Engineering Groups.

DEFICIENCY IN ADMISSION.

Fifteen units of entrance work are required for unconditional admission to the college and no student can be admitted and registered as a candidate for a degree unless he presents at least thirteen units. Any entrance deficiency must be satisfied by enrollment in the Gettysburg Academy or under an approved tutor. Such enrollment must take place at the time of registration in the college. Work thus done in satisfying an entrance deficiency does not give college credit, but does count as part of the current work of the student in estimating the number of hours in which he may be enrolled. Students who can offer the fifteen units for admission to college, but are deficient in the group requirements, may make up the deficiency as part of their elective work in the group and receive (college) credit for the same, provided the deficiency be not in the main subjects of the group and provided the work be done in regular college classes.

ADMISSION TO ADVANCED STANDING.

A candidate for advanced standing must satisfy the entrance requirements and in addition must submit evidence of the satisfactory character of the work for which advanced credit is asked.

No one is admitted to the College after the beginning of the Senior year except by special action of the Faculty.

STUDENTS NOT CANDIDATES FOR A DEGREE.

The courses of instruction are open to persons of suitable age and attainments who wish to pursue special studies without reference to a degree. In order to be admitted to such studies, a candidate must satisfy the Committee on Entrance and the professors concerned that he is prepared to do his work to advantage. Students of the Theological Seminary are admitted to one or more courses in the College.

HONOR SYSTEM IN EXAMINATIONS.

Every student entering College must sign a statement in the Registrar's office expressly accepting the Honor System.

ADMISSION SUBJECTS IN DETAIL.

ENGLISH.

In English the study of the following books, recommended by the National Conference on Uniform Entrance Requirements, is required for 1921-1922.

A. Reasonable familiarity with the substance of the work:

The following are preferred, tho any of the alternatives specified in the Uniform Entrance Requirements for 1919-1922 are accepted:

Shakespeare's "Merchant of Venice" and "Julius Caesar"; Addison's "Sir Roger de Coverley Papers"; Goldsmith's "Deserted Village"; Scott's "Ivanhoe" and "Lady of the Lake"; George Eliot's "Silas Marner"; Irving's "Sketch Book"; Tennyson's "Gareth and Lynette," "Lancelot and Elaine," and "Passing of Arthur"; Ruskin's "Sesame and Lilies."

B. More careful and specific study:

Shakespeare's "Macbeth"; Milton's "Lycidas"; "Comus," "L'Allegro," and "Il Penseroso"; Washington's "Farewell Address"; Webster's "First Bunker Hill Oration"; Carlyle's "Essay on Burns."

The examination will be in two parts,—one of questions on grammar, rhetoric, and composition, the other of questions on the literature specified above.

In the first part, candidates will be asked specific questions and given particular exercises in word-choice, sentence structure, the principles of paragraphing, and other such matters as a student seeking college standing should be proficient in. The examination in literature will require reasonable familiarity with the books and the authors mentioned under "A" above (or those accepted in

substitution for them) ; and fairly thoro knowledge and appreciation of the books and the authors named under "B" above.

No candidate will be accepted in English whose work is seriously defective in spelling, punctuation, grammar, choice of words, sentence structure, paragraphing, or other essentials of good usage.

MATHEMATICS.

A. Algebra. The four fundamental operations for rational algebraic expressions; factoring, determination of highest common factor and least common multiple by factoring; fractions, involution, evolution, radicals, and imaginary quantities. Equations of the first and second degree, ratio and proportion, progressions; binominal theorem for positive integral exponents, and permutations and combinations limited to simple cases.

B. Plane Geometry. Five Books. Demonstration of theorems and constructions, including rectilinear figures, circles, proportional lines, and similar figures; comparison and measurement of surfaces, including triangles, regular polygons, and circles; maxima and minima; originals.

C, D. The entrance requirements in Solid Geometry and Plane Trigonometry are similar to the work done in these subjects in the College course as given on page 84. For advanced standing in Solid Geometry and Trigonometry, candidates must present note-books and other evidence of thoro work.

POLITICAL AND PHYSICAL GEOGRAPHY.

The requirements in Political Geography may be met by the study of any good text-book. The requirement in Physical Geography may be met by the study of any text-book equivalent to Gilbert and Bringham's "Introduction

to Physical Geography," Davis' "Elementary Physical Geography," or Tarr's "New Physical Geography."

GREEK.

A1. Grammar. The candidate must have familiarized himself with the essentials of grammar, namely, the inflections of substantives and verbs; the syntax of cases, and the moods and tenses of the verb; the simple rules for the composition and derivation of words; the structure of sentences, with particular regard to conditional and relative sentences, indirect discourse, and final clauses.

A2. Xenophon. The first four books of "Anabasis."

B1. Prose Composition. The requirements in prose composition involve the ability to translate into idiomatic Greek, continuous narrative based on Xenophon's "Anabasis," Book II, and other Attic prose of similar difficulty. Due regard must be paid to the principles and practice of accentuation.

B2. Homer. The first three books of the "Iliad" (omitting II, 494-end) or the "Odyssey," including the Homeric forms, constructions, and prosody.

B3. Sight Translation. One of the most important assets which a student can bring to the study of college Greek is the ability to read easily at sight passages of equal difficulty with the "Anabasis" or the "Hellenica." For this purpose he should memorize as a working vocabulary the principal words in Xenophon and the three books of Homer.

(See page 60 for Beginners' Greek in College).

LATIN.

A1 Grammar. Allen and Greenough's preferred.

A2. Caesar's "Gallic War," Books I-IV.

B1. Prose Composition, including the translation of English passages on Caesar and Cicero.

B2. Six Orations of Cicero, including at least two against Catiline, the one for Archias, and the one for the Manilian Law.

C. Vergil's "Aeneid," Books I-IV, and so much prosody as relates to Latin versification in general and the dactylic hexameter in particular.

Equivalents will be accepted for work done in Sallust or Ovid or other authors of equal rank.

GERMAN.

The requirements in German presuppose a systematic course extending over at least two years of school work.

The candidate is expected to be able to pronounce German clearly and distinctly. He must possess an accurate knowledge of the rudiments of grammar, and should have acquired an elementary German vocabulary. He should be able to translate easy prose and poetry, and to put into German simple English sentences taken from the language of every-day life and easy selections from English narrative prose.

FRENCH.

The requirements in French correspond to those in German, and include the ability to pronounce French accurately, to read easy French prose, to put into French simple English sentences taken from the language of prose, and a good knowledge of the rudiments of French every-day life and easy selections from English narrative grammar.

SPANISH.

The requirements in Spanish correspond to those in French.

MECHANICAL DRAWING.

Drawings, accompanied by a certificate from the instructor, must be submitted. One unit credit will be allowed in cases where not less than two hundred hours of work has been devoted to the subject.

HISTORY.

A. United States. Montgomery's "Leading Facts of American History," or its equivalent.

B. English. Walker's "Essentials of English History," or its equivalent.

C. Ancient. Myers' "Ancient History," or its equivalent.

D. Medieval and Modern. Myers' "Medieval and Modern History," or its equivalent.

CHEMISTRY.

The candidate should have such knowledge of the general principles of the science and the properties of the more important elements as may be obtained by a careful study of a text-book of the scope of Remsen's "Introduction to the Study of Chemistry, Briefer Course."

The pupil should have performed in the laboratory experiments in number and general character the equivalent of those given in Remsen's "Introduction." The record of this work must be contained in a note-book describing in the pupil's own words the materials used, the apparatus employed (with drawings), the changes occurring, and the resulting products, with the conclusions properly drawn from the phenomena observed.

This note-book must be presented bearing the following endorsement by the instructor: "This note-book is a true and original record of experiments actually performed by —— in —— school during the year ——."

PHYSICS.

A good high school course, using any standard high school text, covering the simple principles of Physics, descriptive and experimental rather than mathematical, including not less than three class periods and two hours of laboratory work a week for one year.

BOTANY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to text-book and laboratory study of this subject with the aid of Bergen's "Essentials of Botany" or some other standard book of equal merit. Drawings and note-books are required.

ZOÖLOGY.

A teacher's certificate showing that a full year of four one-hour periods a week were devoted to this subject. Davidson's "Practical Zoölogy" or any other standard book of equal grade will be accepted. Note-books and drawings must accompany the certificate.

THE GROUP SYSTEM OF COURSES.

The courses of study in the College are arranged in ten groups. These groups are designed to be of equal value in the mental training of the student. This arrangement accomplishes several purposes. It enables the student to select those subjects which are of special value in preparation for subsequent professional study or business. In the first six groups it provides for a general training and broad culture which requires the student not to specialize but to concentrate a fair proportion of his time and energy on one or two related subjects. This gives a fuller training of the mental powers than results from a more diffused and often aimless selection of studies in a too largely elective system.

In addition to these groups of non-professional courses, groups have been established in Civil, Municipal, Mechanical, and Electrical Engineering.

The groups of studies are described in detail on pages 30 to 55 with entrance requirements for each.

VALUE OF A SEMESTER HOUR OF COLLEGE WORK.

A semester hour of college work consists of the equivalent of one weekly exercise for one semester, either a recitation, a lecture, a laboratory period of two and a half or three hours, or an assignment of equivalent work on which an examination is held. A weekly exercise for one semester consisting of one lecture hour in connection with two laboratory hours, counts as one semester hour.

OUTLINE OF GROUPS

GROUP I.—GREEK AND LATIN.

Group Adviser: Professor Biklé.

Entrance Requirements: English, 3 units; Mathematics, A, B, 2½ units; Latin A, B, C, 4 units; Greek A, B, 3 units, or 3 units of Modern Languages, of which 2 units must be in one Modern Language; and 2½ elective units.

This Group is especially recommended for its cultural value and as a preliminary training course for those intending to enter the ministerial, legal, medical, journalistic, or teaching profession, and also provides a foundation for advanced language study.

This Group leads to the degree of **Bachelor of Arts**. Requirement for graduation, 132 semester hours.

The following Schedule of Studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Greek*: Cebes, Lucian	I*	3	2*	3
or Greek*: First Year Greek	A*	3	A*	3
Latin: Livy, Horace (Odes), Cicero (De Senectute)	I, 2	3	2, 3	3
English: English Composition	A	3	A	3
History: Political History of Modern Europe	I	3	I	1
English Bible: General Introduction			I	2
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	I	3	2	3
Chemistry: General Chemistry	I	3	I	3
Elective: Military Science	I	1	I	1
Total Semester Hours (minimum)		18		18

* Students offering a Modern Language for admission will take Greek A, and those offering Greek for admission will take Greek 1 and 2.

Sophomore Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Greek* : Plato (Apology and Crito), Greek History (or Greek 6)	3*	3	4*	3
or Greek* : Second Year Greek	B*	3	B*	3
Latin : Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3
English : English and American Literature	I	2	I	2
Philosophy : Psychology, Introduction to Philosophy	I	2	2	2
Elective : Military Science	2	1	2	1
Electives :		6		6
Total Semester Hours (minimum)		16		16

Junior Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Greek* : Cebes, Lucian	1†	3	2†	3
English : Shakespeare	2	2	2	2
Economics : Principles of Economics	1	3	1	3
Christian Evidences :	1	2		
Philosophy : Logic	3	2		
Philosophy : Ethics			5	2
Physics : General Physics	1	3	1	3
and Physics ‡: Laboratory Physics	2	1	2	1
Elective : Military Science	3	4	3	4
Electives :		5		7
Total Semester Hours (minimum)		16		16

* Students offering Modern Language for admission will take Greek B, and those offering Greek for admission will take Greek 3 and 4.

† Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

‡ In some cases Physics 1 may be taken without Physics 2 (if approved by the Group Adviser and Instructor).

Senior Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Greek* : Plato (Apology and Crito), Greek History (or Greek 6)	3*	3	4*	3
Philosophy : History of Philosophy	6	3	6	3
Philosophy : Theism			8	2
Electives :	9-15		7-13	
It is suggested that these be chosen from the following:				
Latin : Terence, Latin Literature, Roman Law	9, 10	2	10, 11	2
Greek : Euripides,	7	2		
Modern Language :	2 or 3	2 or 3		
English : Public Speaking	5	2	5	2
History : English History, United States History	2	3	3	3
Education : History of Education, Pedagogy	1	3	2	3
Education : School Organization and Method of Teaching	3	2		
Comparative Philology :	1	1	1	1
Biology : Personal and Public Hygiene	9	1	9	1
Physics : Mechanics, Electricity and Light	3, 4	4	3, 4	4
Military Science :	4	4	4	4
<hr/>				
Total Semester Hours (minimum)	16		16	

*Those taking Greek A and B in the first two years, will take Greek 1 and 2 in the Junior, and Greek 3 and 4 in the Senior Year. Greek is not required in the Junior and Senior Years for those who have already completed courses 1-4.

GROUP II.—LATIN AND MODERN LANGUAGES.**Group Adviser:** Professor Grimm.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; Latin A, B, C, 4 units; 2 units of a Modern Language or Greek; History, 1 unit; and $2\frac{1}{2}$ elective units.

This Group is recommended for its cultural value and is further well adapted to preparation for the legal or teaching professions or for literary pursuits. The emphasis is laid on Latin and the Modern Languages, and provision is made for those who wish to make a special study of them.

This Group leads to the degree of **Bachelor of Arts**. Requirement for graduation, 132 semester hours.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the Course and its title, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3
Modern Language:		3		3
English: English Composition	A	3	A	3
History: Political History of Modern Europe	I	3	I	I
English Bible: General Introduction			I	2
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	I	3	2	3
Biology: General Biology, Zoölogy	I	4	2	4
or Chemistry: General Chemistry,	I	3	I	3
or Physics: General Physics	I	3	I	3
and Physics*: Laboratory Physics	2*	I	2*	I
Elective: Military Science	I	I	I	I
Total Semester Hours (minimum)		18		18

* In some cases Physics 1 may be taken without Physics 2 (if approved by the Group Adviser and Instructor).

Sophomore Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3	5, 6	3
Modern Language:	*	3	*	3
English: English and American Literature	1	2	1	2
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2
Elective: Military Science	2	1	2	1
Elective: Modern Language (advised)		6		6
Total Semester Hours (minimum)		16		16

Junior Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Modern Languages:		6		6
English: Shakespeare	2	2	2	2
English: English Novel or Anglo-Saxon	3, 4	2	3, 4	2
Economics: Principles of Economics	1	3	1	3
Christian Evidences:	1	2		
Philosophy: Ethics			5	2
Elective: Military Science	3	4	3	4
Electives:		1-4		1-4
Total Semester Hours (minimum)*		16		16

* The Modern Language chosen in the Freshman Year must be continued.

Senior Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Modern Languages:		6		6
Electives:		10		10
Military Science:	4	4	4	4
Those looking toward teaching are advised to elect:				
Education: History of Education, Pedagogy	1	3	2	3
Education: School Organization and Method of Teaching	3	2		
Philosophy: Logic	3	2		
Total Semester Hours (minimum)		16		16

GROUP III.—HISTORY AND POLITICAL SCIENCE.**Group Adviser:** Professor Valentine.

Entrance Requirements: English, 3 units; Mathematics, A, B, $2\frac{1}{2}$ units; Latin A, B, C, 4 units; 2 units of a Modern Language or Greek; History, 2 units; and $1\frac{1}{2}$ elective units.

In this Group emphasis is laid on the historical studies and on Political Science and Economics. The Group is intended to lay the foundations for professional legal studies and to prepare for the teaching of these subjects.

This Group leads to the degree of **Bachelor of Arts**. Requirement for graduation, 132 semester hours.

The following schedule of studies gives for each subject the name of the Department of Instruction, the number of the course and its title, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	2, 3	3
Modern Language:		3		3
English: English Composition	A	3	A	3
History: Political History of Modern Europe	I	3	I	I
English Bible: General Introduction			I	2
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	I	3	2	3
Biology: General Biology, Zoölogy,	I	4	2	4
or Chemistry: General Chemistry,	I	3	I	3
or Physics: General Physics	I	3	I	3
and Physics*: Laboratory Physics	2*	I	2*	I
Elective: Military Science	I	I	I	I
Total Semester Hours (minimum)		18	18	

* In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

Sophomore Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Latin: Cicero (De Amicitia or De Natura Deorum), Horace (Satires and De Arte Poetica), Tacitus	4, 5	3 3	5, 6	3 3
Modern Language:				
English: English and American Literature	1	2	1	2
Political Science: American Government	1	3	2	3
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2
Elective: Military Science	2	1	2	1
Electives:		3		3
Total Semester Hours (minimum)		16		16

Junior Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
English: Shakespeare	2	2	2	2
Economics: Principles of Economics	1	3	1	3
Economics: Labor Problems, Business Organization	7†	3	8†	3
or Political Science: Comparative Government, Constitutional Law	3†	3	4†	3
History‡: English History	2	3	2	3
or History†: United States History	3†	3	3†	3
Christian Evidences:	1	2		
Philosophy: Ethics			5	2
Elective: Military Science	3	4	3	4
Electives:		3-6		3-6
Total Semester Hours (minimum)		16		16

† Given 1920-1921 and alternate years.

‡ Given 1919-1920 and alternate years.

Senior Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Economics †: Labor Problems, Business Organization	7†	3	8†	3
or Political Science †: Comparative Government	3	3		
History *: English History	2*	3	2*	3
or History †: United States History	3†	3	3†	3
Philosophy : Sociology	4	2		
Electives :	8-11		8-11	
It is suggested that the electives in the Junior and Senior Years be taken from the following:				
Latin : Roman Law	1	1		
Economics : Money and Banking, Business Law	2*	3	5	3
Economics : Public Finance	3	3		
Philosophy : Epistemology	9	1		
Modern Language :	1 or 1½		1 or 1½	
Military Science :	4	4	4	4
Total Semester Hours (minimum)	16		16	

* Given 1919-1920 and alternate years.

† Given 1920-1921 and alternate years.

GROUP IV.—CHEMISTRY AND PHYSICS.**Group Advisers:**

Chemistry Section: Professor Breidenbaugh.

Physics Section: Professor Parsons.

Entrance Requirements: English, 3 units; Mathematics A, B, $2\frac{1}{2}$ units; 2 units each from two Foreign Languages: Latin, French, German, Spanish; and sufficient electives to make a total of 15 units.

In this Group the emphasis is laid on Chemistry and Physics with the requirement that special attention be given to one of these subjects in the Junior and Senior Years. The Group is intended to prepare for teaching these subjects, or for professional studies in these lines or for advanced work in research laboratories in the field of Chemistry and Physics (both scientific and technical), or for manufacturing and commercial pursuits.

Either the Chemistry or Physics section should be selected on entering the Group; however, the choice between Chemistry and Physics as the principal subject is not required to be made until the beginning of the Junior Year.

This Group leads to the degree of **Bachelor of Science**. Requirement for graduation, 134 semester hours.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Modern Language:	*	3	*	3
Latin: Livy, Horace (Odes), Cicero (De Senectute),	1, 2	3	2, 3	3
or Modern Language:		3		3
English: English Composition	A	3	A	3
History: Political History of Modern Europe	1	3	1	1
English Bible: General Introduction			1	2
Mathematics: Plane Trigonometry and Algebra, § Advanced Algebra	1	3	2	3
Chemistry: General Chemistry	1	3	1	3
Elective: Military Science	1	1	1	1
Total Semester Hours (minimum)		18		18

Sophomore Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Modern Language:		3		3
English: English and American Literature	1	2	1	2
Philosophy: Psychology, Introduction to Philosophy	1	2	2	2
Mathematics: Elementary Analysis, § Plane and Solid Analytic Geometry ‡	3	3		
Elementary Analysis †			4	4
			5	3
Chemistry: Qualitative Analysis	2	3	2	3
Physics: General Physics	1	3	1	3
Physics: Laboratory Physics	2	1	2	1
Elective: Military Science	2	1	2	1
Total Semester Hours (minimum)		17		17

* The language chosen in the Freshman Year must be continued for one more year.

† For Chemistry Section.

‡ For Physics Section.

§ Or if the student offers Trigonometry for entrance he may take Math. 2 and 4 in the Freshman Year and Math. 6 (instead of 3 and 4) in the Sophomore Year.

Junior Year (Chemistry Section).

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
English: Shakespeare	2	2	2	2
Economics: Principles of Economics	1	3	1	3
Christian Evidences:	1	2		
Philosophy: Ethics			5	2
Chemistry: Quantitative Analysis	3	3	3	3
Physics: Mechanics, Electricity and Magnetism, and Light	3	3	3	3
Physics: Physical Measurements	4	1	4	1
Elective: Military Science	3	4	3	4
Electives:		2-5		2-5
Total Semester Hours (minimum)		16		16

Senior Year (Chemistry Section).

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Chemistry: Organic Chemistry A	4	3		
Chemistry: Organic Chemistry B	4	6		
Chemistry: Industrial Chemistry			8	3
Chemistry: Special Quantitative Methods			7	6-8
Electives:		7-9		7-9
Military Science:	4	4	4	4
Students intending to engage in Chemical work or in teaching Chemistry are advised to elect from the following list:				
Geology and Mineralogy: Dynamical and Historical Geology	1	2	2	2
Geology and Mineralogy: Mineralogy	3	2	3	2
French:		3		3
German: Scientific German	3	3	3	3
Education:		3		3
Total Semester Hours (minimum)		16		16

Junior Year (Physics Section).

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
English: Shakespeare	2	2	2	2
Economics: Principles of Economics	1	3	1	3
Christian Evidences:	1	2		
Philosophy: Ethics			5	2
Mathematics: Differential and Integral Calculus	6	4	6	4
Physics: Mechanics, Electricity and Magnetism, and Light	3	3	3	3
Physics: Physical Measurements	4	1-2	4	1-2
Elective: Military Science	3	4	3	4
Electives:		0-4		0-4
Total Semester Hours (minimum)		16		16

Senior Year (Physics Section).

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Mathematics: Differential Equations	7	3		
Physics: Physics Seminary	11	1	11	1
Physics: Advanced Laboratory Physics	10	2	10	2
Physics: Recent Advances in Physics,	7	1	7	1
or Physics: Mathematical Physics	8 or 9	2	8 or 9	2
Electives:		6-9		6-9
Military Science:	4	4	4	4
Total Semester Hours (minimum)		16		16

GROUP V.—BIOLOGY, CHEMISTRY, AND PHYSICS.

Group Adviser: Professor Shilliday.

Entrance Requirements: English, 3 units;; Mathematics, A, B, $2\frac{1}{2}$ units; 2 units from each of two foreign languages: Latin, French, German, Spanish; and sufficient electives to make a total of 15 units.

The work in this Group is offered to meet the needs of those who desire a general science course, and in addition includes those special branches in pre-medical work which will admit the graduate to any medical school he may desire to enter.

A student may by commencing his biological studies in the Freshman year, continue to carry work in the Department of Biology thruout the entire four years. In this way he may specialize in biological science so far as time and other required courses permit.

To meet the requirements of those medical schools that admit on two years of college work the following course is given:

First year,—German, French or Latin, English, Biology, Chemistry.

Second year,—German or French, English, Chemistry, Biology, Physics, Philosophy.

Students of this Group may by electing certain subjects in the Departments of Education and Philosophy during the Senior Year meet the teaching requirements of the Pennsylvania School Code.

This Group leads to the degree of **Bachelor of Science**. Requirement for graduation, 136 semester hours.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Modern Language:		3		3
Modern Language:		3		3
or Latin: Livy, Horace (Odes), Cicero (De Senectute)	1, 2	3	1, 2	3
English: English Composition	A	3	A	3
History: Political History of Modern Europe	I	3	I	I
English Bible: General Introduction			I	2
Mathematics: Plane Trigonometry and Algebra, Advanced Algebra	I	3	2	3
Chemistry: General Chemistry	I	3	I	3
Elective: Military Science	I	I	I	I
Total Semester Hours (minimum)		18		18

Sophomore Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Modern Language:		3		3
English: English and American Literature	I	2	I	2
Philosophy: Psychology, Introduction to Philosophy	I	2	2	2
Mathematics: Elementary Analysis	3	3	5	3
Chemistry: Qualitative Analysis	2	3	2	3
Physics: General Physics	I	3	I	3
Physics: Laboratory Physics	2	I	2	I
Elective: Military Science	2	I	2	I
Total Semester Hours (minimum)		17		17

Junior Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
English: Shakespeare	2	2	2	2
Christian Evidences:	1	2		
Philosophy: Ethics			5	2
Biology: General Biology, Zo- ölogy	1	4	2	4
Biology: Botany	6	2	6	2
Chemistry: Quantitative Analysis	3	3	3	3
Physics: Mechanics, Electricity and Magnetism, and Light	3	3	3	3
Physics: Physical Measure- ments	4	1	4	1
Elective: Military Science	3	4	3	4
Total Semester Hours (minimum)	17		17	

Senior Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Economics: Principles of Economics	1	3	1	3
Biology: Human Anatomy and Physiology, Mammalian Histology, Embryology	3, 4	3	5	3
Chemistry: Organic Chemistry A	4	3		
Chemistry: Organic Chemistry C	4	3	4	3
Electives:		4-8		7-8
Military Science:	4	4	4	4
Those looking forward to teaching are advised to elect:				
German: Scientific German	3	3	3	3
Philosophy: Logic	3	2		
Education: History of Education, Pedagogy	1	3	2	3
Education: School Organization and Method of Teaching	3	2		
Those looking forward to Medicine are advised to elect:				
Political Science: Comparative Government, American Government	3	3	2	3
French:		2 or 3		2 or 3
or German:	1	3	2	3
Geology: Dynamical and Historical Geology	1	2	2	2
Physics: Recent Advances in Physics	7	2	7	2
In addition to the above lists, the following are suggested for general culture:				
History: English History	2	3	2	3
Total Semester Hours (minimum)		16		16

GROUP VI.—COMMERCE AND FINANCE.**Group Adviser:** Professor Johnston.

Entrance Requirements: English, 3 units; Mathematics, A, B, 2½ units; History, 2 units; 2 units from each of two Foreign Languages: Latin, French, German, Spanish; and sufficient electives to make a total of 15 units.

This Group is designed primarily for students who intend to enter business, law or the public service. Especial attention is given to the general principles underlying all lines of business, and to the relation of business to government and politics.

This Group leads to the degree of **Bachelor of Science**. Requirement for graduation, 132 semester hours, of which 36 must be in Economics and Political Science.

The following schedule of studies gives for each subject, the name of the Department of Instruction, the number of the course and its title, and the number of semester hours that are credited for each course. A semester hour signifies an hour of lecture or class work, or from two and a half to three hours of laboratory work (or laboratory work including lectures), per week during one semester.

Freshman Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Modern Language:		6		6
English: English Composition	A	3	A	3
History: Political History of Modern Europe	I	3	I	1
English Bible: General Introduction			I	2
Mathematics: Advanced Algebra	2	3		
Mathematics: Commercial Algebra			II	3
Biology: General Biology, Zoölogy,	I	4	2	4
or Chemistry: General Chemistry,	I	3	I	3
or Physics: General Physics	I	3	I	3
and Physics*: Laboratory Physics	2*	1	2*	1
Elective: Military Science	I	1	I	1
Total Semester Hours (minimum)		18		18

* In some cases, if approved by the Instructor and by the Group Adviser, Physics 1 may be taken alone (without Physics 2).

Sophomore Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Modern Language:	*	3	*	3
English: English and American Literature	I	2	I	2
Philosophy: Psychology, Introduction to Philosophy	I	2	2	2
Economics: Principles of Economics	I	3	I	3
Political Science: American Government and Politics	I	3	2	3
Economics: Accounting	6A	3	6A	3
Elective: Military Science	2	1	2	1
Total Semester Hours (minimum)		16		16

Junior Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
English: Shakespeare	2	2	2	2
History†: English History	2	3	2	3
or History‡: United States History	3	3	3	3
Economics†: Money and Banking, Public Finance	2	3	3	3
or Economics‡: Railway Transportation, Business Law	9	3	5	3
or Political Science‡: Constitutional Law, International Law	4	3	5	3
Economics‡: Labor Problems, Business Organization	7	3	8	3
or Economics‡: Industrial Development, Advanced Accounting	11	3	6B	3
or Political Science‡: Comparative Government, Municipal Government	3	3	7	3
Christian Evidences:	I	2		
Philosophy: Ethics			5	2
Elective:		3		3
Elective: Military Science	3	4	3	4
Total Semester Hours (minimum)		16		16

* The Modern Language chosen in the Freshman year must be continued.

† Given 1921-1922 and alternate years.

‡ Given 1920-1921 and alternate years.

Senior Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Economics* : Money and Banking, Public Finance	2	3	3	3
or Economics* : Railway Transportation, Business Law	9	3	5	3
or Political Science* : Constitutional Law, International Law	4	3	5	3
Economics† : Labor Problems, Business Organization	7	3	8	3
or Economics† : Industrial Development, Advanced Accounting	11	3	6B	3
or Political Science† : Comparative Government, Municipal Government	3	3	7	3
Philosophy : Sociology	4	2		
Electives :		8		10
Elective : Military Science	4	4	4	4
Total Semester Hours (minimum)		16		16

* Given 1921-1922 and alternate years.

† Given 1920-1921 and alternate years.

GROUP VII.—CIVIL ENGINEERING.**GROUP VIII.—SANITARY ENGINEERING.****Group Adviser:** Professor Clutz.**GROUP IX.—MECHANICAL ENGINEERING****GROUP X.—ELECTRICAL ENGINEERING.****Group Adviser:** Professor Rosenstengel.

Entrance Requirements: English, 3 units; Mathematics A, B, and D, 3 units; 2 units of a Modern Language; and sufficient electives to make a total of 15 units.

These Groups afford suitable training not only for students who expect to enter this profession, but for those who wish to prepare themselves for callings more or less closely related to engineering, especially in manufacturing and industrial lines. During the first two years, which are the same in the four Groups, except for the subject matter of the drawing in the second semester of the Sophomore year, emphasis is laid on the underlying natural sciences and on mathematics, while during the last two years technical subjects are introduced. Some liberal arts studies are required, and extreme specialization in instruction is avoided, stress being laid on the fundamental principles.

These Groups lead to the degree of **Bachelor of Science**. Requirement for graduation in Groups VII and VIII, 147 semester hours; in Groups IX and X, 143 semester hours.

Freshman Year.

	First Semester.			Second Semester.		
	Course Number	Hours	Credit	Course Number	Hours	Credit
Modern Language*:		3			3	
or Latin: Livy, Horace,	I, 2	3		2, 3	3	
English: English Composition,	A	3		A	3	
Mathematics: Advanced Algebra	3	3				
Plane Trigonometry	IA	1				
Mathematics: Plane Analytic Geometry				4	4	
Chemistry: General Chemistry	I	3		I	3	
History: Political History of Modern Europe	I	3		I	1	
English Bible: General Introduction				I	2	
Physics†: General Physics	I	3		I	3	
Physics†: Laboratory Physics	2	1		2	1	
Engineering: Mechanical Drawing	I	1		I	1	
Engineering: General Engineering.				8	1	
Surveying	II	3		12	2	
Elective: Military Science	I	1		I	1	

Total Semester Hours (minimum)

20

20

* If the language offered for admission is elected, one year is required; otherwise two years.

† These courses not required of Freshmen, 1921-1922; required of Sophomore class 1922-1923 and thereafter.

Sophomore Year.

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
English: English and American Literature	1	2	1	2
Mathematics: Differential and Integral Calculus	6	4	6	4
Physics* Mechanics, Electricity and Magnetism, and Light	3	3	3	3
Physics* Physical Measurements	4	1	4	1
Engineering: Descriptive Geometry, Advanced Mechanical Drawing	2	3	2	2
Engineering: Mechanics	3	5	3	5
Elective: Military Science	2	1	2	1
Total Semester Hours (minimum)	18		17	

GROUPS VII AND VIII.

Summer Field Surveying.

Civil Engineering 12.—Surveying (A), Field Work. Three weeks (145 hours) in August and September between Sophomore and Junior Years. Credit of two semester hours. (See page 91).

Junior Year (Groups VII and VIII).

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
History: Political History of Modern Europe	1	3	1	1
English Bible: General Introduction			1	2
Philosophy: Psychology, Ethics	1	2	5	2
Geology and Mineralogy: Mineralogy	3	2	3	2
Engineering: Hydraulics			5	3
Engineering: Materials Testing	6	4	6	3
Engineering: Elements of Electrical Engineering	7	3	7	3
Civil Engineering: Structural Design (A) and (B)	18	2	19	2
Mechanical Engineering: Thermodynamics	36	3		
Elective: Military Science	3	4	3	4
Total Semester Hours (minimum)	19		18	

* Required of Sophomore class 1921-1922 but not thereafter. Required of Junior class 1923-1924 and thereafter.

Summer Field Surveying.

Civil Engineering 13.—Surveying (B), Field Work. Three weeks (145 hours) in August and September between Junior and Senior Years. Credit of two semester hours. (See page 92).

Senior Year (Groups VII and VIII).

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Economics* : Principles of Economics	I	3	I	3
Christian Evidences :	I	2		
Geology and Mineralogy : Dynamical Geology	I	2		
Civil Engineering : Surveying (B), Astronomy and Geodesy	14	3		
Civil Engineering : Railroads (B)			17	3
Civil Engineering : Structural Design, (B) and (C)	19	2	28	2
Civil Engineering : Structural Drafting			20	2
Civil Engineering : Contracts† and Specifications	21	2	21	2
Civil Engineering † Masonry	22	3		
Civil Engineering : Highways†			23	3
Civil Engineering : Seminary	26	1	26	1
Civil Engineering : Sewerage†			25	2
Elective : Military Science	4	4	4	4
Total Semester Hours (minimum)		16		17

Senior Group VIII.

Work in Sanitation and City Planning is substituted for Railroads and Structural Drafting in the second semester.

* Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

† As offered.

Junior Year (Groups IX and X).

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
History: Political History of Modern Europe	I	2	I	2
English Bible: General Introduction			I	2
Philosophy: Psychology, Ethics	I	2	5	2
Engineering: Hydraulics			5	3
Engineering: Materials Testing	6	4	6	3
Engineering: Elements of Electrical Engineering	7	3	7	3
Mechanical Engineering: Shop Work	31	2	32	2
Mechanical Engineering: Kinematics	33	3		
Mechanical Engineering: Machine Design (A)			34	2
Mechanical Engineering: Heat Power Engineering (A)	36	3	36	2
Elective: Military Science	3	4	3	4
Total Semester Hours (minimum)	<hr/> 20		<hr/> 20	

Senior Year (Group IX).

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Economics*: Principles of Economics	1	3	1	3
Christian Evidences:	1	2		
Mechanical Engineering: Machine Design (B)	35	3	35	3
Mechanical Engineering: Heat Power Engineering (B)	37	3	37	3
Mechanical Engineering: Power Plant Design			38	3
Mechanical Engineering: Mechanical Engineering Laboratory	39	1		
Civil Engineering: Structural Design (A) and (B)	18	2	19	2
Civil Engineering: Contracts and Specifications	21	2	21	2
Mechanical Engineering: Seminary			40	1
Elective: Military Science	4	4	4	4
Total Semester Hours (minimum)		16		17

* Or other courses in Economics aggregating six semester hours selected with the approval of the Department of Economics.

Senior Year (Group X).

	First Semester.		Second Semester.	
	Course Number	Hours Credit	Course Number	Hours Credit
Economics*: Principles of Economics	1	3	1	3
Christian Evidences:	1	2		
Electrical Engineering: Telephone			49	2
Mechanical Engineering: Mechanical Engineering Laboratory	39	1		
Electrical Engineering: Theory of Electrical Machinery	45	4	45	3
Electrical Engineering: Characteristics of Electrical Machinery			46	3
Electrical Engineering: Electrical Laboratory	47	1	47	2
Mechanical Engineering: Heat Power Engineering (B)	37	3		
Civil Engineering: Contracts and Specifications	21	2	21	2
Electrical Engineering: Semi-nary			48	1
Elective: Military Science	4	4	4	4
Total Semester Hours (minimum)		16		16

*Or other courses in economics aggregating six semester hours selected with the approval of the Department of Economics.

COURSES OF INSTRUCTION.

ENGLISH.

Professor Hagen and Mr. Knight.

- A. English Composition.**—This course consists of practice in writing exposition, argument, description, and narration, in long and short themes, and in letters; with the parallel study of specimens, and of the principles of rhetoric as they apply to writing. Lectures, recitations, written exercises in the class-room and outside, and personal conferences.

Required course for all Freshmen. Three periods thruout the year. Credit of six semester hours.

- 1. English and American Literature.**—This course consists of a survey of English Literature from "Bewoulf" to Kipling, and of the chief American writers; lectures, collateral reading, and written reports.

Required course for all Sophomores. Two periods thruout the year. Credit of four semester hours.

- 2. Shakespeare.**—This course embraces the careful study of half a dozen of the plays, with the more rapid reading of others, selected and arranged so as to give the student an insight into the development of Shakespeare's mind and art.

Required course for all Juniors in Groups I-VI. Two periods thruout the year. Credit of four semester hours.

- 3. English Novel and Short Story.**—First two-thirds of the year, a survey of the growth of the novel in structure and content; last third of year, a study of the principles and structure of the short story. Lectures, collateral reading of representative novels and short stories, class discussions, weekly reports, and personal conferences.

Required course for Juniors in Groups II and VI; open to all other Juniors as an elective course. Two periods thruout the year. Credit of four semester hours.

4.—Anglo Saxon.—An introductory course including the study of the elementary principles of the grammar and the reading of representative selections from Anglo-Saxon literature.

Elective for Juniors and Seniors. May be substituted by Juniors and Seniors in Groups II and VI for Course 3. Two periods thruout the year. Credit of four semester hours.

5. Public Speaking and Oral Reading.—This course consists of practice in prepared and extempore speaking, in oral reading of prose and poetry, and in general platform work.

Elective course open to all qualified students. Two periods thruout the year. Credit of four semester hours.

6. Argumentation and Debating.—A study of the substance and the forms of argumentative discourse, written and spoken; involving the principles of inductive and deductive logic, of sound and fallacious reasoning, of evidence, of the selection and use of materials, and of the best forensic and platform practice.

Elective course open to members of class and college debating teams; and to qualified Juniors and Seniors. Two periods thruout the year. Credit of four semester hours.

GERMAN.

Professor Grimm.

German A.—An elementary course. The study of grammar, practice in reading, writing and speaking German, translation of prose and poetry, and the memorizing of simple poems.

Three periods thruout the year. Credit of six semester hours.

German I.—For students who have presented German for admission; also for those who have completed German A. A brief review of grammar, combined with oral and written composition, exercises in conversation, and readings, both with previous preparation and at sight, from standard writers of modern German prose. Some time is also given to ballads and lyrics. Outside reading may be assigned.

Three periods thruout the year. Credit of six semester hours.

German 2.—For students who have passed in German 1. Selections from classical authors. Private reading is required. *Two or three periods thruout the year. Credit of four or six semester hours.*

German 3a.—For candidates for the degree of Bachelor of Science, also open to others who satisfy the instructor of their fitness to take it. Cursory reading of German essays of a general scientific character.

Two or three periods thruout the year. Credit of four or six semester hours.

German 3b.—An advanced course in Scientific German.
Hours and credit to be arranged.

German 4a and b.—Given in alternate years. For those students who have chosen German as their principal subject in Group II; open also to others who satisfy the instructor of their fitness to take it. 4a. The study of the main epochs of the German language and literature, on the basis of readings from representative German authors. 4b. Goethe and Schiller; Goethe, Faust; Schiller, Wallenstein.

Two or three periods thruout the year. Credit of four or six semester hours.

German 5.—An elective course on German literature in the period of the Reformation, with special reference to Luther and the church hymns. Open to advanced students in German.

Hours and credit to be arranged. (Omitted 1920-21.)

German 6.—An elective course devoted to the discussion of grammatical topics, advanced composition, and the critical reading of selected texts, and intended for those students who wish to teach German.

Hours and credit to be arranged.

German 7.—A course aiming to widen the student's vocabulary of modern German by means of extracts from newspapers, periodicals, and other suitable reading. As far as practicable, the course will be conducted in German.

Hours and credit to be arranged. (Omitted 1920-21.)

Deutscher Verein.—Opportunity for more extended German conversation and study may be offered to advanced students in a voluntary German Club, meeting fortnightly from November to April inclusive.

GREEK.

Professor Billheimer.

Preparatory Greek.

A. First Year Greek.—An elementary course for students who have not presented Greek for admission. The course will cover White's "First Greek Book."

Three periods thruout the year. Credit of six semester hours.

B. Second Year Greek.—A course for those who have taken First Year Greek. Books I-IV of Xenophon's "Anabasis" and Books IX-XIII of the "Odyssey" will be read.

Three periods thruout the year. Credit of six semester hours.

1. Cebes.—The "Tablet" will be studied, with a thoro review of forms and the essentials of syntax. Greek Prose Composition.

Freshman course. Three periods, first semester. Credit of three semester hours.

2. Lucian.—The longer selections will be read by the class as a whole, while the shorter dialogues will be assigned to individuals. Lectures on the life and times of Lucian.

Freshman course. Three periods, second semester. Credit of three semester hours.

3. Plato.—"Apology," and "Crito." Individual reports will be made on the life and work of Socrates.

Sophomore course. Three periods, first semester. Credit of three semester hours.

4. Greek History.—A survey of the history of Greece from the earliest times to the death of Alexander the Great. The study of the history of this period will be accompanied by an examination of the early archaeological remains and by the reading of selections from the literary and epi-

graphical sources. Reports on special subjects will be made by members of the class.

Sophomore course. Three periods, second semester. Credit of three semester hours.

- 5. Demosthenes.**—The "First Philippic" and the "Olynthiacs." Oxford text. The students prepare grammatical and historical notes for each oration.

Junior and Senior course. Three periods, first semester. Credit of three semester hours.

- 6. New Testament Study.**—This course embraces a study of New Testament Greek. Some book of the New Testament is read in the original. The study of Biblical Greek has its approach from the classic side, but special attention is given to the distinctive peculiarities of Hellenistic Greek as a later and less artificial dialect of the elaborate and polished language of orators and philosophers. The student is familiarized with the vocabulary of the New Testament. Etymology and syntax are systematically studied.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

- 7. Euripides.**—This course will give a practical introduction to Greek metrics, and will include the history of Greek Tragedy and of the Greek Theatre.

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

Special Arrangements for Beginning Greek in College.

To provide for applicants for Group I who cannot offer the entrance requirements in Greek, but can offer three entrance units in Modern Languages instead, provision is made for beginning Greek in College. Such students take Preparatory Greek Courses A and B during Freshman and Sophomore years, and receive College credit for same.

A student who is a regular member of Group II will be allowed to elect courses in Greek, including Courses A and B, after the Sophomore year, and will be given College credit for them.

LATIN.

Professor Bikié.

Allen and Greenough's "Latin Grammar" and Harper's "Latin Lexicon" are recommended. Of the smaller dictionaries the student is advised to get the "Elementary Latin Dictionary," by Charlton T. Lewis.

1. **Livy.**—Selections from Book I, and the Hannibalian War in Books XXI and XXII. Special attention is given the syntax and Livy's peculiarities of style. Collateral reading on the Punic Wars, and lectures on Rome and Carthage.

Freshman course. Three periods during the first semester up to the Christmas vacation. Credit of two semester hours.

2. **Horace.**—Selections from the "Odes," including a critical interpretation with special attention to the Horatian meters and the mythological and historical allusions of the text. Berens' "Hand-Book of Mythology" is recommended. Collateral reading on Horace as a lyric poet.

Freshman course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

3. **Cicero.**—The "De Senectute" will be read, with thoro drill in syntax, special attention being given to the mode uses of the Latin Subjunctive.

Freshman course. Three periods from the last of March to the close of the academic year. Credit of two semester hours.

Note. During part of the Freshman year there will be, in connection with the reading of the Latin text, drill in Latin Prose Composition, embracing a rapid review of Latin syntax, with oral and written practice in the principles involved.

4. **Cicero.**—The "De Amicitia" or the "De Natura Deorum." Rigid drill in syntax will be continued, with training in reading the Latin text with expression. Collateral reading of the

life and times of Cicero. Informal lectures on Cicero's philosophical views.

Sophomore course. Three periods a week during the first semester up to the Christmas vacation. Credit of two semester hours.

5. **Horace.**—"Satires," and the "De Arte Poetica." After the study of some selected satires the "Ars Poetica" is read, and each student is required to prepare a written analysis of the poem. There is a review of the dactylic hexameter versification.

Sophomore course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

6. **Tacitus.**—The "Agricola," or selections from the "Annals." Along with the translation of the text there will be a study of the times in relation to the literature of this period, and special attention will be given to the characteristics of the Silver Age Latinity.

Sophomore course. Three periods from the last of March to the close of the year. Credit of two semester hours.

7. **Quintilian.**—Tenth Book of the "Institutes." The student is required to make a close study of the terms used by Quintilian in literary criticism, and to make a summary and classification of the Greek and Roman authors.

Junior course. Two periods during the first semester to the Christmas vacation. With course 8, credit of four semester hours.

8. **Juvenal.**—Selected Satires. With full explanations of the text and collateral reading on the private and social life of the Romans of the Empire. Followed by a short course in Roman Antiquities.

Junior course. Two periods from the beginning of January to the close of the college year. With course 7, credit of four semester hours.

9. **Terence or Plautus.**—The "Andria" of Terence or the "Captivi" of Plautus. The dramatis personae are assigned to special members of the class and the parts are rendered both in Latin and English. Informal lectures on the Roman theatre; also on the origin and development of the Latin

drama, and the value of the Roman comedy to the philologist and the student of Roman life.

Senior course. Two periods for ten weeks. With courses 10 or 11, and 12 or 13, credit of four semester hours.

10. Latin Literature.—A course of lectures embracing a general survey of the whole field, and aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, with special attention to the writers of the Golden and Silver Ages. Or, —

11. Roman History.—A course of lectures covering the period from 150 B. C. to 100 A. D.

Senior course. Two periods for eight weeks. With courses 9 and 12, credit of four semester hours.

12. Roman Law.—Morey's "Outlines" is the chief text-book. After a careful study of the historical development and content of Roman Law, a paper is required from each member of the class on a subject assigned for special investigation. Or, —

13. Roman Constitutional History.—The subject is pursued with the aid of a text-book.

Senior course. Two periods for seventeen weeks. With courses 9 and 10, or 11, credit of four semester hours.

ROMANCE LANGUAGES.

Professor Baxter, Mr. Becker, Mr. Deardorff.

Courses running thru two years at least should be planned for by every student who enrolls as a beginner in any Romance language.

Only one Romance language should be begun in any semester.

A student who plans to "major" in a Romance language should arrange his schedule to obtain a total of not less than twenty-four semester hours in the language selected, exclusive of supplementary reading.

A student who wishes to be recommended to teach French or Spanish will be expected to pass the subjoined minimum of courses with high grades and in addition to pursue such supplementary reading as may be possible. Minimum: (a) Elementary course, (b) Intermediate, (c) one Literary, (d) Composition, (e) two Oral, (f) Methods.

The elementary courses in the Romance languages provide a thoro drill in the fundamentals of grammar, composition, pronunciation, conversation and translation, as well as a beginning in the study of the literature of the languages.

The intermediate courses complete the essentials of grammar and rhetoric and offer somewhat critical studies of various classes of modern literature.

The literary courses deal with the history of the literature and the development of the languages and offer critical studies of important periods and masterpieces.

The courses in composition require the preparation of essays, short stories, "magazine articles," and similar work.

The oral courses give opportunity for oral reading, conversation, and the oral discussion of assigned topics.

The commercial and scientific courses make provision for the special needs of students planning to engage in commercial or scientific pursuits.

The supplementary reading courses, which are optional in connection with all other courses, make it possible for ambitious students to do much more reading than can be assigned to a class collectively, and therefore make much more progress than the average student. The quantity of reading each semester depends entirely on the individual student; it may vary from a few pages in the case of one to several hundred pages in the case of another.

FRENCH.

French A.—Elementary Course. For beginners.

Three periods thruout the year. Credit of six semester hours.

French 1.—Intermediate Course. Prerequisite, French A.

Three periods thruout the year. Credit of six semester hours.

French 2.—Literary Course, A. Alternates with course B.

French 3.—Literary Course, B. Alternates with course A. Pre-

requisite for each literary course, French 1. Course A deals with the earlier literature of the language, B with the later. A is offered in the odd-numbered years, B in the even-numbered.

Two or three periods thruout the year. Credit of four or six semester hours.

French 4.—Composition Course.

One to four periods thruout the year Credit of two to eight semester hours.

French 5.—Oral Course A. Alternates with course B.

French 6.—Oral Course, B.—Alternates with course A. Prerequisite for French 5 is French A, and for French 6 a prerequisite is French 5.

Each course, two or three periods thruout the year. Credit of four or six semester hours.

French 7.—Commercial Course. Alternates with French 8.

French 8.—Scientific Course. Alternates with French 7. A prerequisite for each course is French 1. French 7 is offered in the odd-numbered years and French 8, in the even-numbered.

Each course two or three periods thruout the year. Credit of four or six semester hours.

French 9.—Supplementary Reading Course. Reports are required instead of recitations.

One to four periods thruout the year. Credit of two or eight semester hours.

French 10.—Methods Course. For prospective teachers.

One hour thruout the year. Credit of two semester hours.

SPANISH.

Spanish 1.—Elementary Course. For beginners.

Three periods thruout the year. Credit of six semester hours.

Spanish 2.—Intermediate Course. Prerequisite, Spanish 1.
Three periods thruout the year. Credit of six hours.

Spanish 3.—Literary Course, A. Alternates with B.

Spanish 4.—Literary Course, B. Alternates with A. Prerequisite for each literary course, Spanish 2. Course A deals with the earlier literature of the language, and is offered in the odd-numbered years; B deals with the later literature of the language and is offered in the even-numbered years.

Each course, two or three periods thruout the year. Credit of four or six semester hours.

Spanish 5.—Composition Course.

One to four periods thruout the year. Credit of two to eight semester hours.

Spanish 6.—Oral Course, A. Alternates with B.

Spanish 7.—Oral Course, B. Alternates with A. Prerequisite for Spanish 6 is Spanish 1, and for Spanish 7 a prerequisite is Spanish 6. Course A is offered in the even-numbered years and course B, in the odd-numbered.

Each course, two or three periods thruout the year. Credit of four or six semester hours.

Spanish 8.—Commercial Course. Alternates with Spanish 9.

Spanish 9.—Scientific Course. Alternates with Spanish 8. Prerequisite for each course, Spanish 2. Spanish 8 is offered in the odd-numbered years, and Spanish 9, in the even-numbered.

Each course, two or three periods thruout the year. Credit of four or six semester hours.

Spanish 10.—Supplementary Reading Course. Reports are required instead of recitations.

One to four periods thruout the year. Credit of two to eight semester hours.

Spanish 11.—Methods Course. For prospective teachers.

One hour thruout the year. Credit of two semester hours.

PORTUGUESE.

Portuguese 1.—Elementary Course. For beginners. Prerequisite, French 1 or Spanish 2. Alternates with Portuguese 2. Offered in the odd-numbered years.
Three periods thruout the year. Credit of six semester hours.

Portuguese 2.—Intermediate Course. Prerequisite, Portuguese 1. Offered in the even-numbered years. Alternates with Portuguese 1.
Two or three periods thruout the year. Credit of four or six semester hours.

Portuguese 3.—Supplementary Reading Course. Instead of recitations reports are submitted every week.
One to four periods thruout the year. Credit of two to eight semester hours.

ITALIAN.

Italian 1.—Elementary Course. For beginners. Prerequisite, French 1 or Spanish 2. Alternates with Italian 2. Offered in the even-numbered years.
Three periods thruout the year. Credit of six semester hours.

Italian 2.—Intermediate Course. Prerequisite, Italian 1. Alternates with Italian 1. Offered in the odd-numbered years.
Two or three periods thruout the year. Credit of four or six semester hours.

Italian 3.—Supplementary Reading Course. Reports are submitted instead of class recitations.
One to four periods thruout the year. Credit of two to eight semester hours.

COMPARATIVE PHILOLOGY.

Professor Grimm.

1. **Linguistic Science.**—A course open to advanced students, dealing with the principles of Linguistic Science.
One period thruout the year. Credit of two semester hours.
(Omitted 1920-1921).

2. **Sanskrit.**—Beginners' course in Sanskrit. Open to Advanced students. This course includes the study of grammar and the interpretation of an easy text from Lanman's Reader.
Two periods thruout the year. Credit of four semester hours.

ENGLISH BIBLE.

Professor Valentine.

1. **General Introduction to the English Bible.**—The progress of the revelation presented in the Scriptures is followed in its historical developments from the origins of the Hebrew people to the close of the Apostolic Age.
Freshman course. Two periods, second semester. Credit of two semester hours.

2. **Literary Study of the Bible.**—The distinctive types of literary structure in the Bible as presented by Moulton in his "Modern Reader's Bible" are studied. The underlying principle is that an understanding of the outer literary form is an essential guide to an appreciation of the inner matter and spirit.

Sophomore course. One period thruout the year. Credit of two semester hours.

3. **New Testament Study.**—See Greek 6.

CHRISTIAN EVIDENCES.

Professor Valentine.

1. A constructive study of the evidences of the presence and ac-

tion in the world of a supernatural redemptive power operating thru the Gospel, as these appear in the first Christian documents, in Christian history, and Christian experience, with the special aim of dealing with the perplexing questions which the mind encounters in the effort to intellectualize the content of the Christian revelation and state it in terms of modern knowledge and thought.

Junior course. Two periods, first semester. Credit of two semester hours.

HISTORY.

Professor Valentine.

1. **Political History of Modern Europe.**—The present conditions of Europe are explicable only in the light of preceding events. A new era was inaugurated by the political and industrial revolutions of the eighteenth century. With these as background the progress of the subsequent development is studied, with the special view of enabling the student to understand contemporary events and movements by thus connecting them with their proximate origins.

Freshman course. Three periods in first semester, one period in second semester. Credit of four semester hours.

2. **English History.**—After a rapid introductory survey of the Anglo-Saxon period, the course begins with the Norman conquest and deals with the details of historical development down to the present time.

Junior and Senior course. Three periods each semester. Credit of six semester hours. Alternates with Course 3. Given 1919-1920 and alternate years.

Prerequisite, Course 1.

3. **United States History.**—This course comprises a study of our national history. An effort is made to discern the social and economic forces that have been operative in the development of the republic, and thus lead to an understanding of the national problems of the present.

Junior and Senior course. Three periods each semester. Credit

of six semester hours. Alternates with Course 3. Given 1920 1921 and alternate years.

Prerequisite, Course 1.

PHILOSOPHY.

Professor Sanders and Dr. Kramer.

1. **Psychology.**—A course in general psychology which aims to acquaint the student with the phenomena of mind, the methods of psychological investigation, and the practical bearing of the various mental functions on the problems of ethics, pedagogy, etc.

Sophomore course. Two periods, first semester. Credit of two semester hours.

2. **Introduction to Philosophy.**—The course in general psychology suggests the problems of philosophy. The course in Introduction aims to acquaint the student with the content of philosophy, the origin and development of the various problems, the aim and method of philosophy, the results which have been attained, and its relation to the other departments of human thought.

Sophomore course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

3. **Logic.**—An introductory course in the laws of thought. The evolution of the concept, its development into judgment and inference, the systematic function of classification, the explanatory function of generalization, and the methodology of proof and investigation are studied with a view to securing a foundation for the theory of knowledge and effective scientific method.

Junior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

4. **Sociology.**—A study of the nature of society and its problems. Starting with the psychological factors of sociation, the development of social institutions, the economic and cul-

tural factors of social progress, and the elimination of hindrances, evils are taken up in turn with a view to an understanding of the methods of social improvement.

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

- 5. Ethics**—A study of human conduct. The concept of personality and the idea of self-realization, as forming the background of moral judgment, are wrought into a system which explains the origin of the moral motives as well as their implication of God and immortality.

Junior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

6. History of Philosophy.

- A. Ancient and Medieval Period.**—This course traces the rise and progress of reflective thought as it appears among the Greeks and culminates in Scholasticism. Special stress is placed upon the Greek thinkers, with a view to acquiring an understanding of the spirit of philosophy.

Senior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3.

- B. Modern Period.**—This course covers the period from the Renaissance to the present time. Special stress is placed upon the great systems. The student is required to read selections from the great thinkers and report on them, the constant aim being to cultivate the philosophizing attitude, thus furnishing a basis for independent thought as well as an inspiration to do original thinking.

Senior course. Three periods, second semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, 3, and 6 A.

- 7. Philosophy of Religion.**—A study of religion as a distinct factor in human development. The aim of the course is to

show the nature of religion and to interpret the various forms in which it manifests itself.

Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

- 8 Metaphysics.**—Beginning with the method of system building, the student is introduced to the meaning of a world-view, the factors which a comprehensive and consistent view must recognize, and the reasons for regarding Theism as the theory which best meets existing requirements.

Senior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, 3, 5, and 6.

- 9. Epistemology.**—A study of epistemology investigating the principles of science with a view to understanding their origin, their validity, and their philosophical implications.

Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

- 10. Experimental Psychology.**—This is an elementary laboratory course in psychology, covering the most essential features in the experimental method.

Three laboratory periods, second semester. Credit of three semester hours.

Prerequisite, Philosophy 1.

EDUCATION.

Professor Sanders and Dr. Kramer.

- 1. History of Education A (General).**—A study of the most important movements in the history of education and of the factors and personages instrumental in bringing about various steps in the long line of progress.

Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2.

History of Education B (United States).—The development of Education in the United States furnishes the subject matter of this course. The interrelation between educational ideals and methods and the needs imposed by the development of colonial and national life and the more recent industrial development is followed very closely. The aim constantly kept in the foreground in these courses is to get a clear grasp of the ways in which the schools shape the destiny of civilization.

Three periods, second semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2.

2. Philosophy of Education.—This course is an elaboration of the answer to the age old question "What is it to educate?" It is a systematic treatment of the aim of education, what determines the aim, the content-material and the principles governing the realization of this aim.

Three periods, second semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2, and Education 1.

3. School Organization and Administration.—A study of the practical problems of school organization and administration.

Three periods, second semester. Credit of three semester hours.

Prerequisite, Philosophy 1, 2, and 3.

4. Secondary Education.—A study of the principles and problems of the secondary school. The course is intended for those who are looking forward to High School and Superintendency positions.

Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1, 2, and 3, and Education 1.

5. Educational Psychology.—This course deals with the psychology of learning, methods of mental measurement, memory and intelligence tests, treatment of precocity and deficiency, &c.

Three periods, second semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2.

6. Methods.—This course deals with methods of teaching in the High School.

Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2.

Note. The Pennsylvania School Code requires of all teachers who desire the State certificate courses 1, 3, and 5, in Philosophy, and at least six semester hours in Education. Some of the neighboring States require more.

Various departments will offer courses in methods. Consult head of the Department of Education.

ECONOMICS.

Professor Johnston and Mr. Becker.

1. Principles of Economics.—A study of the conditions of national prosperity as wealth, competition, law, morals, and geographical situation. An analysis of the productive forces and industries of society. Exchange from angles of value, money, banking, marketing, and foreign commercial policy. Under distribution are examined principles determining rate of wages, interest, rent, and profit. Rational consumption. Luxury. Taxation. Current social policies aiming at economic reform.

Sophomore course for students in Groups III and VI. Junior and Senior course for other students. Three periods thruout the year. Credit of six semester hours.

Prerequisite for all other courses in Economics unless permission is otherwise given by Professor of Economics.

2. Money and Banking.—An examination of the nature and functions of money. Theory of credit. Origin and development of banking. Domestic and foreign exchange. Bank currency. The clearing house. Commercial banking. Bank supervision. Federal Reserve System. Foreign banking systems.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given in 1921-1922 and alternate years.

3. Public Finance.—Attention is given to sources of public revenue. Distribution of taxation. Land, property, and income tax. Expenditures for maintenance of government and defense. Administration of relief. Education. Aid to industry. Theory of public indebtedness. The budget

system. Constant reference to the structure and functioning of American public finance.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1921-1922 and alternate years.

4. Sociology.—See Philosophy 4.

5. Business Law.—This course is designed to give the student a knowledge of the legal rights and obligations arising out of common business transactions. The fundamental laws pertaining to contracts, partnerships, corporations, negotiable instruments, sales, etc., are examined.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1921-1922 and alternate years.

6. Accounting.

A. Elementary Accounting.—This course deals with the technique of accounting in produce and provision business, general merchandise and manufacturing business. Attention is given to cost analysis and other fundamental features of the subject. Double entry system.

Sophomore course. One lecture and three hours of laboratory work per week thruout the year. Credit of six semester hours.

Prerequisite for Accounting B.

B. Advanced Accounting.—This course deals with some of the more advanced phases of accounting, such as depreciation, the reserve, goodwill, deficiency accounts, realization and liquidation, cost accounting and auditing.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1920-1921 and alternate years.

7. Labor Problems.—A study of the relation of the employee to the employer, including topics as woman and child labor, immigration, sweating system, poverty and unemployment, strikes and boycotts, labor organization, agencies of industrial peace, profit sharing, conciliation and arbitration, industrial education and labor laws.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1920-1921 and alternate years.

8. Business Organization.—A study of business structure in simple and compound forms as individual enterprise, partnership, joint stock company, corporation, combination trusts, community of interest organization, holding company and complete consolidation. Promotion, Underwriting. Reorganization and receivership. Public policy with reference to corporation and trust problems.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1920-1921 and alternate years.

9. Railway Transportation.—A survey of the development of transportation and a discussion of its social and economic influence. Railway problems in the United States. Methods of competition, combination, discrimination and investments. Stock watering and speculation. Government regulation. The problems after the war of federal administration and ownership of the railroads.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1921-1922 and alternate years.

11. Industrial Development of the United States.—A historical and descriptive course emphasizing the economic factors in the expansion and progress of the United States and serving to give the student a concrete picture of the modern world of industry, including agriculture, manufacturing, industrial combinations, domestic and foreign commerce, currency and banking, labor organizations, etc.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1920-1921 and alternate years.

POLITICAL SCIENCE.

Professor Johnston.

1,2. American Government and Politics.—Colonial origins of American institutions. Evolution of Federal and State constitutions. Evolution of political issues. Development of party machinery. General features of federal and state government. Executive, legislature, and judiciary. Administration. Foreign affairs. Commerce. Taxation and

finance. State and municipal organization and functions.
Local rural government.

Sophomore course for students in Groups III and VI. Sophomore Junior and Senior course for other students. Three hours, thruout the year. Credit of six semester hours.

Prerequisite for other courses in Political Science.

3. Comparative Government.—A study of the structure and functioning of European governments with constant reference to American federal and state governments.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1920-1921 and alternate years.

4. Constitutional Law.—A study of the American Constitution viewed in the light of the Supreme Court decisions. This course is given for those who wish to make an extended study of the basic principles of United States Government.

Junior and Senior course. Three hours, first semester. Credit of three semester hours. Given 1921-1922 and alternate years.

5. International Law.—The development of the rules of international law, the rights and obligations of nations in times of war and of peace, the settlement of international disputes are considered.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1921-1922 and alternate years.

7. Municipal Government.—A description of the organization of municipal government in the United States including an account of the various organs, their relations to one another, the powers and responsibilities of legislative and administrative officials. An examination of commission and city manager plans of government.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1920-1921 and alternate years.

BIOLOGY

Professor Shilliday.

Courses 1 to 6 are required of regular students in Group V All

courses are open as electives to those who are prepared to follow them profitably. Students are expected to provide themselves with the required text-books, instruments, and material necessary for their various courses.

- 1. General Biology.**—This course aims to give the student a conception of the fundamental facts and theories of present-day biological science, based upon text-book and laboratory work. The course includes a study of those type forms of animals and plants that furnish an understanding of basic principles of function and structure. The laboratory work includes a careful study of selected type forms, and a number of experiments demonstrating general principles of functional activity. The zoölogical work of the course includes Invertebrate Zoölogy. Text-book and laboratory manual to be selected. Prerequisite for all other courses in the department.

First semester. Three lectures and three two-hour laboratory periods each week. Credit, four semester hours.

- 2. Vertebrate Zoölogy.**—The course is based upon a careful laboratory study of representative forms from each of the main classes of vertebrates. Special attention is given to comparative anatomy of the forms studied, and the physiology of the various systems in each, and the relations existing among animals from their evolutionary development. Text-books: Hegner's "College Zoölogy"; Pratt's "Vertebrate Zoölogy."

Prerequisite, Course 1.

Second semester, three recitations and three two-hour laboratory periods a week. Credit, four semester hours.

- 3. Anatomy.**—The work of this course includes mainly a detailed study of human osteology using human skeletons, and comparative mammalian anatomy using a typical mammal, cat, dog, or rabbit. The general physiological functions of organs and systems are considered together with their anatomical features. The instruction is by class and laboratory work. Text-books: Kimber's "Anatomy and Physiology"; Davidson's "Mammalian Anatomy." Reference

works, standard text-books of human and mammalian anatomy.

Prerequisite, Courses 1 and 2.

Course covers first twelve weeks of first semester. Three lectures and three two-hour laboratory periods each week. Credit, three semester hours.

4. Embryology.—The course is intended to furnish a knowledge of the general principles of vertebrate embryology. The course is based mainly on the embryology of the chick and pig. The essential subjects covered are: The histology of the reproductive organs, development and maturation of the sex cells, fertilization, early segmentation, and formation of primitive germ layers, formation of the organs and external form of the body.

The laboratory work includes the technique of preparing whole mounts of chick embryos, and staining and preparation of serial sections of the later embryos used. In addition, the class uses the slides in the departmental slide library. The class work in the main is a discussion of those stages of development studied in the laboratory, and of those general principles requiring special explanation. Text-book and laboratory guide to be selected.

Prerequisites, Courses 1, 2, and 3. Course covers 12 weeks immediately following Course 3. Three recitations and three two-hour laboratory periods each week. Credit, three semester hours.

5. Mammalian Histology.—This course includes the work ordinarily given in courses of general Histology; special attention is given to the histology of the human body, and to this end human tissues are used whenever available. The course includes a careful study of the primary tissues, followed by a study of the organs as formed of these tissues in their variously modified forms. The laboratory work includes the technique of preparation of slides from the freshly killed tissue to the finished slide. These are used by the student for his microscopical work, together with slides from the slide library of the department. The work is based upon a standard text-book and emphasizes the physiology of the organs in connection with their structure. Text-book: Bailey's "Text-book of Histology."

Prerequisites, Courses 1, 2, 3, and 4.

Last twelve weeks of the second semester. Three recitations and three two-hour laboratory periods a week. Credit, three semester hours.

- 6. Botany.**—The course aims to give the student an appreciation of the role of plants in nature, their relations to each other and to man. The class work includes the general physiology and ecology of plants, and their structures. The laboratory work is based on selected representatives of the main groups; especial attention is given to the bacteria, yeasts, molds, and flowering plants. Field work in identification of forest trees of the vicinity in fall and winter condition, and the preparation of an herbarium of spring flowers identified by use of a standard analytical key. Text-book, Ganong's "College Botany."

Prerequisite, Course 1.

Two lectures and two two-hour laboratory periods a week thruout the year. Credit of four semester hours.

- 7. History of Biology.**—This course is designed to give an appreciation and an understanding of the historical development of biological science, its history being traced from earliest authentic records to the present. A non-technical course, tho it requires a foundation in technical courses. The work includes text-book and collateral reading. A cultural rather than a technical course. Text-book: Locy's "Biology and Its Makers."

Prerequisites, Courses, 1, 2, 3, 4, 5.

First semester, three recitations a week. Credit, three semester hours.

- 8. Bacteriology.**—The course gives the general principles of the science, based upon text-book and practical laboratory work. The latter includes the methods and application of sterilization of apparatus, instruments, and media, preparation of artificial media, inoculation of media, and a microscopical study of organisms from cultures. Methods of routine staining technique are followed, and structural characteristics determined. Text-book and laboratory manual to be selected.

Prerequisite, Course 1.

Two lectures and two three-hour laboratory periods a week during the last twelve weeks of second semester. Credit three semester hours. Course offered alternate years. Given 1921-22.

- 9. Physiology.**—The instruction consists of a course of lectures and recitation work covering the general principles of

human physiology. The course is designed to give a general knowledge of physiology based upon the well established facts of the science, without dealing with those phases of the subject that are still largely matters of scientific argument. Text-book, Martin's "Human Body" (Advanced).

Prerequisites, Courses 1, 2, 3, and 5.

Three recitations a week during the second semester. Course offered alternate years; offered 1922-23. Credit, three semester hours.

HEALTH AND SANITATION.

Professor G. D. Stahley, M. D.

This branch of instruction consists of a course of weekly lectures, during the year, in the fundamental principles of Sanitation and Hygiene, for which a credit of two semester hours is given.

It also includes brief courses of lectures in personal hygiene to the college Freshmen and the Academy students; also an arrangement by which cases of sickness are immediately reported, so as to forestall medically serious illness; likewise a medical examination of all new students to ascertain physical defects, as well as providing professional supervision in the required physical training for Sophomores and Freshmen in the gymnasium. A weekly or semi-weekly sanitary inspection of students' rooms and dormitories is also here included.

It is believed that these services are helping to provide needed health education, as well as maintaining good health conditions in the student body.

CHEMISTRY.

Professors Breidenbaugh and Stover, Mr. Dickson and Assistants.

The courses in chemistry are not designed to prepare specialists in any department of the subject, but to give a general training in the science. The successful completion of these courses will prepare the student to enter on graduate or professional studies in any leading university, or qualify him for a more suc-

cessful pursuit of any technical business, or fit him to teach chemistry in secondary schools.

The instructors are in daily attendance during the college term from 8 to 12 and from 1:30 to 4:30, except on Saturday afternoons.

1. **General Chemistry.**—No previous acquaintance with the subject is required. Those offering chemistry for admission will be allowed to substitute, as far as is best for the individual, from Course 2. The general principles and the fundamental laws of the science are included in the course, which consists of lectures, readings from approved text-books—such as Remsen's "College Chemistry," Newell's "Inorganic Chemistry for Colleges," Kahlenberg's "Outlines of Chemistry"—and laboratory work for which careful record in note-books is required. There are daily quizzes and frequent examinations. The last several weeks of the course are devoted to a practical review and examination in the determination of a certain number of substances, based on the results of previous study.

*Three lectures and six laboratory hours weekly for one year.
Credit of six semester hours.*

2. **Qualitative Analysis.**—The student, following an outline prepared for the purpose, becomes acquainted with the general reactions of the elements of the several groups and from these data constructs the scheme of analysis which is applied in a number of determinations. There is constant supervision and personal conference over the work. Reference book, Fresenius' "Qualitative Analysis."

*One lecture and nine laboratory hours weekly for one year.
Credit of six semester hours.*

Prerequisite, 1.

3. **Quantitative Analysis.**—While such lectures as are desirable are given, this is essentially an individual laboratory course. An assigned minimum of work is required. Reference book, Fresenius' "Quantitative Analysis."

Nine hours of laboratory work weekly for one year. Credit of six semester hours.

Prerequisite, 1 and 2.

4. **Organic Chemistry.**—Lectures and laboratory work. The labo-

ratory work is partly preparations and partly the approximate analysis of animal and plant substance.

A. Three lectures weekly during the first semester. Credit of three semester hours.

B. Group IV. Eighteen laboratory hours weekly during the first semester. Credit of six semester hours.

C. Group V. Nine laboratory hours weekly during the year. Credit of six semester hours.

Prerequisite, 1 and 2.

7. Special Quantitative Methods.—Students who are qualified are offered courses in advanced and applied analysis—such as mineral, ore, and water analysis, the examination of food stuffs and manufactured articles.

Such hours as may be arranged for during Senior year, or during Junior year by such as have completed the other work in the department. Credit of six to ten semester hours.

8. Industrial Chemistry.—A course of class-room exercises.

Three periods, second semester. Credit of three semester hours.

Prerequisite, 1, 2, and 3.

GEOLOGY AND MINERALOGY.

Professor Breidenbaugh.

1. Dynamical Geology.—This course of lectures gives the student an acquaintance with the facts concerning inorganic geology, and a discussion of the dynamical agencies which have been operative in bringing the earth to the condition in which we now find it.

Field work and the preparation of papers from personal observation and practical application to the work. Frequent examinations are held.

Two periods, first semester. Credit of two semester hours.

2. Historical Geology.—A comprehensive discussion of the principles of evolution, with illustrations from historic geology.

The student is assigned readings from the text-books of

Dana, Le Conte, Chamberlain and Salisbury, and other authors.

Two periods, second semester. Credit of two semester hours.

- 3. Mineralogy.**—Following a short course of practical work in Crystallography, there is a series of determinations of not less than one hundred minerals by their physical and blowpipe characteristics.

Two periods thruout the year. Credit of four semester hours.

Prerequisite, Chemistry 1.

MATHEMATICS AND ASTRONOMY.

Professor Arms and Mr. Schwartz.

- 1. Plane Trigonometry and Algebra.**—Definitions and properties of the trigonometric functions; algebraic theory of exponents; theory and use of logarithms; solutions of triangles.

Required, in all Groups except VI, of Freshmen who do not present Trigonometry for entrance. Three periods the first semester. Credit three semester hours.

- 1A. Plane Trigonometry.**—A rapid review of the essentials with emphasis on those parts necessary for work in higher Mathematics.

Required, in all Groups except VI, of Freshmen who present Trigonometry for entrance. One period during the first semester. Credit one semester hour.

- 2. Advanced Algebra.**—Elementary theory of equations; complex numbers, De Moivre's theorem and Argand's diagram. Binomial theorem.

Required in Groups I-VI of Freshmen. Given for three periods in the first semester for Freshmen in Group VI and also for those who offer Trigonometry. Repeated in the second semester for Freshmen in Groups I-V. Credit of three semester hours.

- 3. Elementary Analysis.**—For description see Course 5 below.

Required of Sophomores in Group IV (Chemistry) and V. Three periods during the first semester. Credit of three semester hours.

3A. Advanced Algebra.—A thoro introduction to graphs and determinants, limits and series.

Required of Freshmen in Groups VII-X. Three periods during the first semester. Credit of three semester hours.

4. Plane and Solid Analytic Geometry.—The locus of an equation; the line; the conic sections and other curves, their tangents, normals and areas; transformation of coördinates; introduction to solid analytics.

Required of Freshmen in Groups IV (Physics), VII-X. Four periods during the second semester. Credit of four semester hours.

5. Elementary Analysis.—This course, with Math. 3, is intended primarily for those who do not intend to continue the study of Mathematics, but who wish to obtain some knowledge of the fundamental principles of Analytic Geometry, the calculus, and topics in Algebra omitted in Math 2.

Required of Sophomores in Groups IV (Chemistry) and V. Three periods during the second semester. Credit of three semester hours.

6. Differential and Integral Calculus.—Theory of limits; fundamental formulae of differentiation with applications, including maxima and minima and rates; series and the expansion of functions; other applications. The indefinite and definite integral; reduction formulae; applications including areas and volumes.

Required of Sophomores in Groups VII-X and in Group IV (Physics). Elective for those who have taken Math. 4 and 5. Four periods thruout the year. Credit of eight semester hours.*

7. Differential Equations.—The theory, together with the principles and devices, which will enable the student to integrate the ordinary or partial differential equations he is likely to encounter.

Required in Group IV (Physics). Three periods during the first semester. Credit of three semester hours.

Prerequisite Math. 6.

9. Introduction to Analysis.—Topics from the Calculus not given

* Students who intend taking Math. 6 are advised to take Math 4 instead of Math. 5 in preparation.

in Math. 6, together with an introduction to the Theory of Functions of Real Variables.

Elective for those who have taken Math. 6. Three periods thruout the year. Credit of six semester hours.

- 10. Astronomy.**—A practical course in the determination of meridian, longitude, and time, and including the formulae of Spherical Trigonometry and the solution of spherical triangles.

Required of Juniors in Groups VII and VIII. Two periods for eight weeks, or the equivalent. Hours to be arranged. Credit of one semester hour.

- 11. Commercial Algebra.**—An introduction to the mathematics of investment, including interest, discount, annuities, amortization, bond values, and sinking funds.

Required of Freshmen in Group VI. Three periods during the second semester. Credit of three semester hours.

Prerequisite Math. 2.

- 12. Advanced Commercial Mathematics.**—A continuation of Math. 11 for students who wish to enter upon work in finance, life insurance, and advanced economics. The application of analytical method to statistics, mortality laws, and probability.

Prerequisite, Math. 11.

Three periods thruout the year. Credit of six semester hours.

PHYSICS.

Professor Parsons, Mr. Miller, and Assistants.

- 1. General Physics.**—A complete course covering the whole subject of Physics. Mechanics, properties of matter, sound, heat, electricity and magnetism, and light.

Required of Sophomores in the Engineering groups, Sophomores in Groups IV and V, and Juniors in Group I, and elective in other groups. Three hours per week thruout the year. Credit of six semester hours.

2. General Laboratory Physics.—A laboratory course in General Physics, designed to accompany Course 1. (Excepting in special cases the two courses must be taken together).

Three or more hours per week thruout the year. (One and two periods per week on alternate weeks). Credit of two semester hours.

3. Mechanics, Electricity and Magnetism, and Light.—A more advanced course, completing the General Physics in Course 1, including alternating currents, electric waves, and the fundamentals of photography. Lectures, recitations, and problems.

Required of all students in Groups IV, V, and VII-X. Three hours per week thruout the year. Credit of six semester hours.

4. Physical Measurements.—A continuation of Course 2 and designed to accompany Course 3.

Three or more hours per week thruout the year. (One and two periods per week on alternate weeks). Credit of two semester hours.

7. Recent Advances in Physics.—Radioactivity, discharge of electricity thru gases, the electron theory, and other topics. Lectures illustrated by experiments.

Two lectures per week thruout the year. Credit of two semester hours.

Prerequisite, Physics 1 and 3.

8. Mathematical Physics.—Lecture course in mathematical Physics for graduate students (or other advanced students). The topics treated may vary from year to year. Such subjects as mechanics, hydromechanics, the kinetic theory of gases, the theory of sound, electricity and magnetism, physical optics, and the electro-magnetic theory, are treated.

Two or three lectures per week thruout the year.

Prerequisite, Physics 1-4, and Mathematics 6.

10. Advanced Laboratory Physics.—This comprises all the advanced laboratory work not included in the preceding courses, and is designed for graduate students and others specializing in Physics. The experiments or problems as-

signed are variable and may include research on some assigned topic.

The course may be taken thru more than one year, credit being given proportional to the work done.

- 11. Physics Seminary.**—A meeting, for one hour a week thru-out the year, of the advanced students, at which papers on assigned topics are presented, current topics are discussed, and reports given of recent work of investigators (obtained from reading the journals).

Credit of two semester hours.

- 12 Descriptive Astronomy.**—A course in general and descriptive astronomy (not mathematical). Text-book recitations, lectures, and some observatory work (observations of moon, planets, stars and nebula). Elective for all students.

Two hours per week, first semester. Credit of two semester hours.

- 12B. Physical Astronomy.**—Astrophysical problems, including the application of spectroscopy to the study of the heavenly bodies.

Two hours per week, second semester. Credit of two semester hours.

LECTURESHIP ON CONSTITUTIONAL LAW.

Henry Wolf Bickl , Esquire.

Four lectures on the Constituion of the United States; including (a) a discussion of the American Doctrine of Constitutional Law, and (b) a consideration of the commerce clause, (c) of the clause forbidding the impairment by the States of the obligation of contracts, and (d) of the guarantees of personal liberty and equality contained in the Fourteenth Amendment.

LECTURESHIP IN SOCIOLOGY.

Mrs. Mary G. Stuckenberg has founded a Lectureship in Sociology in honor of her late husband, J. H. W. Stuckenberg, D.D., LL.D., by the terms of which the College will have annually a lecture on some phase of Sociology from the standpoint of Christian Ethics by specialists in this important field. The lecture is given at such a time as is convenient to the lecturer chosen for the year.

ENGINEERING COURSES.

Courses are offered in

**Civil Engineering,
Sanitary Engineering,**

**Mechanical Engineering,
Electrical Engineering.**

All engineering students pursue the same subjects for the first two years. At the end of that time it is believed that most men will be able to make an intelligent choice between Civil and Sanitary Engineering on the one hand, and between Mechanical and Electrical Engineering on the other. At the end of the third year a civil engineering student decides further between the general Civil Engineering course (Group VII) and the Sanitary Engineering course (Group VIII). At the same point in his studies a mechanical engineering student decides between the course in Mechanical Engineering (Group IX) and that in Electrical Engineering (Group X).

Civil Engineering is an increasingly comprehensive term. Beside municipal engineering it includes among other subdivisions, topographic, railroad, and structural engineering. The Sanitary (Municipal) Engineering course is offered for those who wish to specialize somewhat in subjects relating more particularly to the problems of sanitation and civic betterment with which the engineering department of a modern city is concerned. The field for the mechanical engineer also has broadened of late, resulting in its subdivisions into branches of activity which call for technical knowledge in special fields. No attempt has been made in the following courses to meet these special demands, as it is the aim of the department to graduate men well grounded in the fundamentals and sufficiently broad in training to fill positions of some responsibility in any part of the field. Students interested in mechanical engineering are advised to follow Group IX unless especially interested in applied electricity; in that case they are recommended to the course in Electrical Engineering, Group X.

Engineering graduates not infrequently find employment in positions in which some knowledge of a branch of engineering other than that for which they have been trained is necessary or valuable. The engineering instruction is on this account designed to

be broad and fundamental, and subjects which tend toward extreme specialization are not offered.

An increasing proportion of graduates in engineering engage in callings more or less closely related to engineering, such as manufacturing, contracting, or commercial lines. In view of this there have been included in the engineering courses such subjects as will lay the foundations of a broad scientific education.

The following eight technical subjects underlie all engineering training, and are required of all students in Groups VII, VIII, IX and X.

- 1. Elementary Mechanical Drawing.**—Use of instruments, orthographic, isometric and cabinet projections, simple sections, intersections and developments, lettering, sketching, tracing and blueprinting.

Three hours thruout the year. Credit of two semester hours.

Note. The College provides drawing desks, etc., but each student furnishes his own drawing outfit, costing about thirty dollars. Students are urged to avoid the purchase of cheap instruments which soon become worthless. Engineering students use their drawing instruments thruout their course and for years afterward. The purchase of an outfit of good grade is therefore economy.

- 2. Descriptive Geometry.**—The first semester's work comprises descriptive geometry, problems relating to the point, line, and plane in space, followed by a thoro drill in sections, intersections, and developments, with applications to engineering and architectural problems. The instruction is designed to develop in the student the power of concise reasoning. During the second semester the work is a continuation of Course 1.

Two hours of recitation and four hours of drawing weekly, first semester. Two periods of three hours each, drawing, second semester. Total credit of four semester hours.

- 3. Mechanics (A). Statics and Dynamics.**—Forces in equilibrium, simple structures, translation and rotation, work, energy, power. A conference period of two hours is held once a

week for a free discussion of difficulties and the solution of problems.

Four recitations weekly thruout the year. Credit of ten semester hours.

Prerequisite, Mathematics 3 and 4.

- 5. Hydraulics.**—A study of the mechanics of water at rest and in motion, with applications to a variety of problems relating to the pressure of water and to its flow in natural and artificial channels, pipes, etc.

Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Engineering 3 and Mathematics 5.

- 6. Materials Testing.**—Recitation and laboratory course in the study of the properties of engineering materials. In the first semester the standard tests of cement, mortar, and sand are made and compared. The common tensile, compressive, and transverse tests on steel, timbers, and concrete are made and discussed. The solution of practical problems is emphasized. During the second semester the results of the laboratory work of the first semester are applied in the application to the use of the materials in engineering work.

Three recitations and three laboratory hours weekly, first semester. Credit of four semester hours. Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Engineering 3 and 4, and Mathematics 5.

- 7. Elements of Electrical Engineering.**—The application of the fundamentals of electricity and magnetism to electrical engineering practice. Theory, structure, and operation of electrical machinery. Recitation work supplemented by simple laboratory experiments.

Three recitations and three laboratory hours weekly, first semester; two recitations and three laboratory hours, second semester. Credit of six semester hours.

Prerequisite, Physics 3, and 4, and Engineering 5.

- 8. General Engineering.**—A course partly of lectures and partly of problems intended to call to the student's attention some of the requirements in character and mind for suc-

cess in engineering. The use of the slide rule, tables as given in the usual hand-books and the working out of a number of simple problems make up the remainder of the course.

Two hours of recitation for one-half semester. Credit of one semester hour.

- 11. Plane Surveying.**—This course gives drill in the use of the more common surveying instruments, in the best methods of keeping notes, and in the computations and mapping required in connection with the usual work of a surveyor.

Two hours of recitation and three hours of drawing weekly, first semester and one-half second semester. Credit of five semester hours.

CIVIL AND SANITARY ENGINEERING.

Professor Clutz.

- 12. Surveying (A).**—Field work done during a period of three weeks immediately preceding the beginning of the Junior year.* It consists of drill in the use of the more common surveying instruments, supplemented by daily recitations designed to coördinate the instruction. Plotting the notes of the survey, tracing and blue-printing the map, and additional drill in plain lettering.

Three weeks (145 hours) in August and September. Total credit of three semester hours.

Prerequisite, Course 2.

- 13, 14. Surveying (B).**—The field work is done during a period of three weeks immediately preceding the beginning of Senior year.* Topographic surveying, using a variety of methods and instruments, including the plane table, supplemented by daily recitations. A short railroad survey and location. Adjustments of instruments. The office

* The Summer Course in 1921 begins at 8 A. M. on Tuesday, Aug. 30.

work, done in term time, includes instruction in topographic drafting and the use of topographic maps, also the treatment of various subjects in higher surveying. Text-books.

Three weeks (145 hours) in August and September. Three hours recitation first semester. Total credit of five semester hours.

Prerequisite, Course 11, 12.

17. Railroads (B).—A course in the economics of railroad construction and operation, maintenance and valuation.

Three hours, second semester. Credit of three semester hours.

18. Structural Design (A).—Stresses in framed structures, principally roof trusses and bridges of various types. Graphical methods of solution are employed.

Two hours of recitation and four hours of drawing weekly, first semester. Prerequisite, Course 3.

19. Structural Design (B), (C).—A course in the strength of materials as applied to the analytical design of structures of wood and steel. Beginning with beams the student finally makes all the calculations necessary in the complete design of a plate girder and trusses of the riveted and pin connected types.

Given in the second semester, Junior year, and first semester, Senior year. Two hours recitation and four hours computation or drafting weekly in the Junior year; three hours recitation and six hours computation or drawing in the Senior year.

28. Structural Design (D).—A course in the use and design of reinforced concrete.

Given second semester, Senior year. Two hours recitation and four hours computation or drafting. Credit of two semester hours.

20. Structural Drafting.—The making of detailed drawings for the component parts of a steel structure. Conformity with the best practice is required, and the drawings are carefully checked.

Six hours of drawing weekly, second semester. Credit of two semester hours.

21. Contracts and Specifications.—The elements of contract law

as applied to the mutual relations of engineer, contractor, and owner. Critical review of typical specifications and practice in specification writing.

Two recitations weekly, first and second semester. Credit of four semester hours.

- 22. Masonry.**—Design and construction of stone and concrete structures, heavy foundations, arches, walls, and dams. Instruction is in part by recitation, but includes drafting-room work in the design of several typical structures.

Two recitations and three hours of drawing weekly, first semester. Credit of three semester hours.

- 23. Highways.**—Recitations on the design, construction, and maintenance of roads and pavements, with especial consideration of the exigencies of present-day traffic.

Three recitations weekly, second semester. Credit of three semester hours.

- 24. Water Supply Engineering.**—The quantity and quality of water from various sources. Works for the collection and storage of water, for its purification and for its distribution.

Two recitations weekly, second semester. Credit of two semester hours.

- 25. Sewerage.**—Various types of design and construction are discussed in recitations. Plans for a small sewer system are made by each student. Modern methods for the purification and disposal of sewage and garbage. Visits are made to plants under construction and in use.

Two recitations weekly, second semester. Credit of two semester hours.

- 26. Civil Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, thruout the year. Credit of two semester hours. Open only to Seniors in Groups VII and VIII.

MECHANICAL ENGINEERING.

Professor Rosenstengel.

- 31. Shop Work (A).**—Simple exercises in the formation of green sand moulds, supplemented by lectures on modern foundry practice. Bench and lathe work in wood, elements of pattern making.

Six laboratory hours weekly, first semester. Credit of two semester hours.

- 32. Shop Work (B).**—Forge practice in iron and steel. Shaping, hardening, and tempering of tools. Machine and bench work in metals. Lectures on modern shop practice.

Six laboratory hours weekly, second semester. Credit of two semester hours.

- 33. Kinematics.**—Theory of mechanisms, instant centers, cams, gears, linkages, velocity and acceleration diagrams, etc. Recitation work supplemented by the solution of practical problems in the drawing room.

Two recitations and three hours of drawing weekly, first semester. Credit of three semester hours.

Prerequisite, Course 2.

- 34. Machine Design (A).**—An elementary course showing the application of the fundamentals of mechanics and kinematics to machine design. Selection of mechanisms for specified work, analysis of energy and force problems in machines, and proportioning of detailed parts from theoretical and practical considerations.

Two recitations weekly, second semester. Credit of two semester hours.

Prerequisite, Course 6 (1st semester), 4, and 33.

- 35. Machine Design (B).**—Application of principles of Course 34 to the design of two typical machines, including all necessary computations; working drawings of most important parts, and a finished assembly drawing.

One recitation and six hours of drawing weekly thruout the year. Credit of six semester hours.

Prerequisite, Course 34.

- 36. Heat Power Engineering (A).**—Thermodynamics of gases and vapors, theoretical gas cycles, application of theory to problems of commercial heat engines, engine performances and efficiencies.

Three recitations weekly, first semester, two recitations weekly, second semester. Credit of five semester hours.

Prerequisite, Mathematics 5, and Physics 1 and 2.

- 37. Heat Power Engineering (B).**—A continuation of Course 36. Fuels, combustion, boilers, gas engines, steam engines and turbines, power house auxiliaries, etc. Efficiency and economy of operation. Selection and combination of elements for power houses. This study covers the theory necessary for Course 38.

Three recitations weekly thruout the year. Credit of six semester hours.

Prerequisite, Course 36.

- 38. Power Plant Design.**—Design of a typical power plant, selection and arrangement of main units and auxiliaries. An outline drawing is made showing the location and arrangement of boilers, turbines, condensers, pumps, etc., the provision for coal and ash handling, and storage. Economic features of power house design emphasized.

Six hours of computation or drawing, one hour recitation, weekly, second semester. Credit of three semester hours.

May be taken only in conjunction with Course 37.

- 39. Mechanical Engineering Laboratory.**—Calibration of common engineering measuring instruments, such as steam gauges, thermometers, indicator springs; determinations of quality of steam; measurements of power; efficiency tests of boilers, gas engines, pumps, etc. Computation periods.

Three laboratory hours weekly, first semester. Credit of one semester hour.

Prerequisite, Course 36.

- 40. Mechanical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, second semester. Credit of one semester hour. (Open only to Seniors in Group IX.)

ELECTRICAL ENGINEERING.

Professor Rosenstengel.

- 45. Theory of Electrical Machinery.**—Fundamentals of the electric and magnetic circuit; representation of alternating currents and voltages by vectors and complex quantities; study of the alternating current circuit; theory of transmission lines; transformers, alternators, synchronous and induction motor, direct current machines, etc.

Four recitations weekly, first semester. Three recitations weekly, second semester. Credit of seven semester hours.

Prerequisite, Course 7.

- 46. Characteristics of Electrical Machinery.**—This course supplements the work of Course 45. Problems in alternating current circuits. Outline design and predetermination of performance characteristics of transmission lines, transformers, alternators, alternating current motors and direct current generators and motors. Practice is given in the use of standard hand books.

Nine hours of computation weekly, second semester. Credit of three semester hours.

May be taken only in conjunction with Course 45.

- 47. Electrical Engineering Laboratory.**—Elementary and advanced experimental work in electrical engineering: the study of polyphase alternating current circuits, shape of A. C. waves, determination of the magnetic properties of steel and iron; commercial testing of alternators, transformers, synchronous motors, induction motors, D. C. machines, etc.

Three laboratory hours weekly, first semester; six laboratory hours weekly, second semester. Credit of three semester hours.

Prerequisite, Course 7.

- 48. Electrical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, second semester. Credit of one semester hour. (Open only to Seniors in Group X.)

- 49. Telephones.**—Theory of the telephone. The design and con-

struction of telephone instruments, switchboards, and transmission lines. Text-book.

Two recitations, second semester. Credit of two semester hours.

Prerequisite, Course E. E. 7.

Trips of Inspection.

Several short tours are arranged during the course for the inspection of engineering structures, power plants, shops, manufacturing establishments, etc., in the vicinity. Reports are prepared by each student from his individual notes.

Engineering Laboratory.

A departmental library and reading room of reference books, periodicals, and technical reports is being built up in connection with the College Library. Students have access to the following publications:

"Engineering News-Record," "Municipal Journal," "Railway Review," "Electrical World," "Industrial Management," and "American City."

Engineering Equipment.

For a detailed description of the equipment in engineering see page 128.

MILITARY SCIENCE AND TACTICS.

(Reserve Officers' Training Corps.)

Captain Tuttle and First Sergeant Ryan.

As a part of the program for national preparedness, Congress by Act of June 3, 1916, authorized the establishment and maintenance in civil institutions of learning fulfilling certain requirements, of units of the Reserve Officers' Training Corps, so that in time of national emergency there may be a sufficient number of educated men, trained in military science and tactics, to officer and lead intelligently the large armies upon which the safety of the country will depend. Under the provisions of this Act the President of the United States has established an infantry unit, senior division, of the Reserve Officers' Training Corps in this College and has detailed a regular army officer to serve here as Professor of Military Science and Tactics and a noncommissioned officer to serve as his assistant. In order to encourage students to enter this corps said Act of Congress makes very liberal provisions furnishing the members free of charge all the needed equipment in arms, ammunition, uniforms, and, in the case of those taking the advanced course, additional uniforms, training camp expenses, and an allowance in cash equal to the regular army garrison ration. The work includes lectures and classroom work as well as military drill, target practice and gymnastic exercises. The mental as well as physical benefits which a student may derive from this course are obvious; and it supplies in the most approved form that element of training in discipline and obedience to authority which has been largely lacking in the educational system of our country. There is a great demand thruout the country for teachers of high school grades who are able to give military instruction.

A course if elected becomes exactly like a required course in mathematics or history, and the student must complete it, but other than this it involves no compulsory military obligations.

The course in Military Science and Tactics is divided into two

parts, each one requiring two years of work. For the amount of college credit see the outline of Groups, pp. 30-55.

BASIC COURSE.

Any student electing this course must devote an average of at least three hours per week for two successive years to the work required (First Year and Second Year).

ADVANCED COURSE.

When any member of the Reserve Officers' Training Corps has completed (here or elsewhere) the first two academic years of service, and has been recommended for further military training by the President of the College and the Professor of Military Science and Tactics, he will be furnished by the U. S. Government commutation of subsistence (an allowance) equal to the regular garrison ration prescribed for the Army. This allowance now is 53 cents per day, extending thru and including the summer recess between third and fourth years. A student electing to take this advanced course will be required to devote an average of at least five hours per week to the work during the remainder of his college course (Third Year and Fourth Year). He must also attend the training camp prescribed by the Secretary of War between the third and fourth years, his transportation to and from this camp, clothing and subsistence while there, and pay at the rate of one dollar per day, being furnished by the U. S. Government.

OUTLINE OF THE COURSES IN MILITARY SCIENCE AND TACTICS.

Basic Course.

1. **First Year.**—An introduction to military science including Military Courtesy, Infantry Drill, Guard Duty, Care and Use of Arms and Equipment, elements of Marksmanship, and Physical Training with a special view to developing proper carriage and posture.

Three periods thruout the year. Credit of two semester hours.

2. **Second Year.**—Military Sketching and Map Reading, Infantry

Drill, Rifle and Pistol Marksmanship, Minor Tactics, Personal Hygiene and Camp Sanitation, and Physical Training.

*Three periods thruout the year. Credit of two semester hours.
Prerequisite, Course 1.*

Advanced Course.

- 3. First Year.**—Field Engineering, Minor Tactics, Infantry Drill, Special Infantry Weapons, Practical Leadership, and Physical Training.

*Five periods thruout the year. Credit of eight semester hours.
Prerequisite, Courses 1 and 2.*

- 4. Second Year.**—Military History and Policy, Infantry Drill, Military Law and Rules of Land Warfare, Minor Tactics, Musketry, Administration, and Physical Training.

*Five periods thruout the year. Credit of eight semester hours.
Prerequisite, Courses 1, 2, and 3.*

No student electing one of these courses will be promoted to the next higher class in College or graduated from College unless he has completed the work of the course for the previous year to the satisfaction of the Professor of Military Science and Tactics.

The appointment of cadet officers and noncommissioned officers for the Corps are made from members of the Junior and Senior Classes in College and from members taking post-graduate courses, provided there is a sufficient number. It is the intention to give the student entering the advanced course the benefit of an opportunity of training in a responsible rather than in a subordinate position.

No military duties in addition to the training courses outlined are required from members of the Reserve Officers' Training Corps.

A student having completed these courses will on graduation from College be eligible for appointment to the Officers' Reserve Corps as a temporary second lieutenant of the regular army in times of peace for purposes of further instruction, for a period not exceeding six months, with all the allowances now provided by law for that grade, but with pay at the rate of \$100 per month.

For those who aspire to enter the ranks of regular army officers

from civil life the Reserve Officers' Training Corps in our College offers unexcelled advantages and opportunities.

EQUIPMENT.

Located as it is in the heart of the great Battlefield of Gettysburg, Pennsylvania College is admirably situated for conducting courses in Military Science and Tactics. This situation is rendered doubly important when one stops to realize that this very terrain is that used for practically all theoretical instruction given in Minor Tactics all over the country. While other units of the R. O. T. C. are issued maps of this terrain for their theoretical instruction, they are compelled to work out practical problems on available local terrain (often poorly mapped). This institution enjoys the advantage of conducting its practical work on the same terrain which is studied in the text furnished by the War Department.

Complete equipment is furnished by the Government at no cost to the student. In addition to the Service Rifles and Pistols regularly used for drill and target work, there is on a hand a complete set of Special Infantry Weapons consisting of Browning Automatic Rifles, Browning Machine Guns, 3-inch Stokes Mortar, 37-mm. Gun, Hand and Rifle Grenades. All of these are used for both theoretical and practical instruction.

For the study of Minor Tactics, complete maps, in different scales, are furnished. These maps are all of the terrain in the immediate vicinity of Gettysburg. This collection is supplemented by a B-H Relief Map with which over one thousand combinations of terrain may be made, thus covering every possible formation of ground over which troops may be required to maneuver.

Complete files of all War Department publications are available in unit headquarters. The system of correspondence, filing, and property accounting is exactly the same as that used in the army. Students are thus enabled to receive a well rounded course in Administration and both see and do the practical work.

Both an indoor and outdoor target range is provided. During inclement winter weather instruction is carried on indoors with sub-calibre rifle and pistol. As soon as the weather permits, firing is started out of doors with the U. S. Magazine Rifle, M'03, Colt Automatic Pistol, Browning Automatic Rifle and Machine Gun.

FINANCIAL BENEFITS OF R. O. T. C. TO COLLEGE MEN.

When a student enters the unit he receives a complete uniform valued at \$50 and consisting of the following articles of clothing:

1 Hat, service	1 Belt, waist
1 Cord, hat	1 Leggings, woolen, spiral, pr.
2 Shirts, flannel	1 Shoes, garrison, pr.
1 Coat, woolen	2 Ornaments, collar
1 Breeches, woolen, pr.	1 Ornament, sleeve
1 Overcoat, service	

For each additional year that he remains in the unit, he receives another complete uniform. Thus the student taking the complete course (four years) will receive clothing alone to the value of two hundred dollars.

By completing the advanced course, the student receives the following from the government:

Uniforms @ \$50 for four years	\$200.00
Textbooks	20.00
Commutation of subsistence @ 53c. for 590 days	312.70
Rations in kind at camp	31.50
Ration allowance enroute to and from camp	8.00
Travel allowance @ 5c. for 1,000 miles (average)	50.00
Pay while in camp @ \$1 for 42 days	42.00
Uniform while in camp	25.00

Total amount received in four years\$689.20

ROSTER OF OFFICERS AND NON-COMMISSIONED OFFICERS.

Battalion Staff.

J. E. Endres.....	Major
R. K. G. Rice	1st Lt. and Bn. Adjutant
C. R. Simon	Bn. Sergeant Major
A. R. Naus	Bn. Supply Sergeant

Company Officers.

Captains.

W. G. Weaver

C. E. Hershey

First Lieutenants.

O. D. Coble G. I. Myers

Second Lieutenants.

D. G. Davis J. M. Gentzler

Non-commissioned Officers.**First Sergeants.**

J. D. Glenn W. L. Mertz

Platoon Sergeants.

W. G. McAllister L. R. Weaver
W. H. Hill P. M. Willard

Sergeants.

D. W. Woods P. E. Lawyer
J. Brenneman W. H. Miller
G. T. Mahaney R. E. Wertman
E. R. Bickell J. E. Ridder

Corporals.

E. L. Pegg E. B. Hanks
J. A. McGuaghy R. B. Mathias
M. S. Q. Overmiller C. L. Kressler
W. D. Guss S. L. Wolf
R. G. Brininger H. E. McBride
W. H. Saas R. C. Robinson

GENERAL INFORMATION.

The College aims to develop the greatest possible individuality and the highest manhood of the student. The prevailing influences are such as tend to lead young men to an active Christian life and to a full realization of their personal responsibilities. The immediate supervision of the students is in the hands of the President and Dean with the Class Advisers.

CLASS ADVISERS.

A professor is appointed as Adviser for each class. The members of the class should present any request to the Faculty thru their Class Adviser and confer with him on personal and college matters (see page 15 for list of Class Advisers).

STUDENT GROUP ADVISERS.

The professor at the head of each Department acts as the adviser of all the students having a major in his Department. He is known as the Group Adviser. He exercises oversight in the student's selection of electives and in the general character of his work. The Group Advisers are as follows: Group I, Professor Biklé; Group II, Professor Grimm; Group III, Professor Valentine; Group IV, Professors Breidenbaugh and Parsons; Group V, Professor Shilliday; Group VI, Professor Johnston; Groups VII and VIII, Professor Clutz; Groups IX and X, Professor Rosenstengel.

STUDENT COUNCIL.

Without lessening its authority and responsibility, the Faculty has delegated certain duties in government to

the student body as an exercise in self-government. The students act through a Student Council consisting of four Seniors, three Juniors, two Sophomores, and one Freshman, elected by their respective classes. This Council acts in certain matters of discipline and in matters concerning the general welfare of the student body, and is one medium of communication between the students and the Faculty. Hazing in any form is forbidden. Any practice involving physical, personal injury and bodily harm or the performance of any humiliating action entailing surrender of dignity and self-respect under fear or threat of force, is regarded as hazing. To have or to drink intoxicating beverages is forbidden.

TERMS AND VACATIONS.

The college year of 35 weeks is divided into two semesters. The first semester begins at 11 A. M. on the third Wednesday in September and continues, with recesses at Thanksgiving and Christmas, to the end of January; the second semester begins when the first semester ends and continues, with an Easter recess, to Commencement Day, the second Wednesday of June. The closing days of each semester are devoted to examinations.

RULES GOVERNING CHURCH AND CHAPEL ATTENDANCE.

Every student rooming under college regulations is required to attend, on week days, a prayer service at 12 M. in Brua Chapel. When absent in any semester FIFTEEN TIMES, the student is warned, and if absent TWENTY ONE times he is suspended for two weeks.

Every student is required to attend one designated service every Sunday in the College Church. When absent TWO times in any semester the student is warned, and if absent THREE times he is suspended for two weeks. Students affiliated with another denomination than the Lutheran will, *on the parent's written request*,

be permitted to attend the church for which request is made, and in such cases the college has no responsibility for regularity of attendance.

As soon as the number of absences designated have been incurred by any student the proctor will give written notice to the Registrar who will then send to the student a warning, or notice of two weeks' suspension, as the case may require.

When a student, due to protracted sickness or for some other imperative reason, exceeds the number of absences allowed for church or chapel, the Dean is authorized to extend the number of absences allowed before the penalties noted above become operative.

A church absence incurred by reason of absence from town may be cancelled upon presenting in person within three days to the Proctor a statement signed by the Dean that the student was given permission to leave town, or a written statement signed by the officiating Minister to the effect that the student attended church on the date in question.

Members of athletic teams and musical organizations, participants in literary contests, and representatives of societies for the purpose of attending conventions, may, on application to the Dean, receive such extension of absence allowance as duties incident to their work on these organizations may require, provided the total absence allowance does not exceed THREE absences from church or THIRTY absences from chapel.

RULES GOVERNING CLASS ATTENDANCE.

(1). Each student is allowed individually 10 per cent. absences from class room work each semester in each course. Fractions are not counted and absences may not exceed 4 in any course during a single semester. The student is urged and expected to make use of this allowance of absences only in case of sickness or for some other good reason.

(2). A further allowance of absences may, on peti-

tion, be granted members of athletic teams and musical organizations, to participants in literary contests, and to representatives of societies for the purpose of attending conventions, but in no case shall an individual student be allowed a total of more than 15 per cent absences. This further allowance in no case to be more than 50 per cent additional.

(3). Absences are reckoned from the first day of the semester. Any absence on the two days preceding or the two days following any recess is counted as 2 absences.

(4). Absences beyond the number allowed from class work, in (1) and (2) above, will not be excused for any cause whatever, and no extension of absences will be allowed; and all excess absences in any class count as zero on the daily class grade. But, if any student has not taken his allowed absences needlessly, and has exceeded the allowed amount because of protracted sickness or other imperative necessity, the instructor at his discretion may assign extra work as a substitute for the work missed on account of the excess absences and may credit the grade for this work in the place of the zeros given for the excess absences. The student should understand that he cannot demand this from any instructor as a right, and that such a privilege is more likely to be granted to a student whose previous record for attendance and devotion to daily duties is good than to one whose record is poor.

(5). In case of absences from the class work in any subject in excess of the allowed amount, the instructor may exclude the student from the semester examinations in the subject, or may even give him an "F" for the semester grade necessitating the repetition of the semester's work in this course. The Faculty may also in case of excess absences in 2 or more subjects, or in church

and chapel, require the work in all courses of the semester to be repeated.

(6). A student returning to college from a suspension for absence from chapel or church is permitted no absence from chapel or church, as the case may be, for the remainder of the semester and is required to make up the work missed in such manner and at such time as the several instructors may require. For such extra work on the part of the instructors the student must pay to the college Treasurer, for each examination in each course, the sum of three dollars. This charge also applies to absences incurred under item (4), cases of protracted sickness excepted.

(7). Physical training is required of all male students of the Freshman and Sophomore Classes who are not members of the Reserve Officers' Training Corps.

ELECTIVES.

A student having electives must deposit with the Registrar, within the first two days of the year, a written list of his electives, bearing the endorsement of the student's Group Adviser and of the instructors concerned. After the first week of the year changes in electives can be made only when approved by the Faculty, under such conditions as may be determined in each case. No regular student may drop an elective subject without faculty permission; failure to secure such permission will be regarded as a deficiency in that subject.

EXAMINATIONS.

Examinations are held in all subjects at the close of each semester or when, during the term, a subject is completed. Instructors may hold topical or quiz examinations at the time of any of the regular appointments with the class. Absences from these examinations are governed by the rules given above.

CONDITIONS AND DEFICIENCIES.

Freshman entrance conditions must be satisfied by the beginning of the Sophomore year.

A student whose grade in any course is reported as deficient at the close of a semester must present himself for re-examination at the beginning of the next semester; failing in this examination he must repeat the semester's work in that course. The matter of re-examinations is governed by the following rules:

1. Re-examinations for those students whose grade, as reported to the Registrar at the close of the previous semester, is "E" or "incomplete," shall be held at such a time as the instructor shall appoint, not later than October 10 in the first semester and not later than March 1 in the second semester.

2. Re-examinations must be given by the instructor at such a time as not to conflict with any of the regular classwork of the student.

3. A student may be allowed, upon written permission of the instructor, approved by the group adviser, to defer the re-examination until the final examination at the end of the semester's work in the next succeeding class in the given subject.

4. If the student fails to pass the re-examination given under rules 1 or 3, he must repeat the semester's work in the given course.

5. Failure to report for the re-examination at the time appointed will count as a failure in the examination unless, owing to sickness or urgent necessity, the faculty allow another re-examination.

A student who at the beginning of any college year continues deficient in more than one third of a year's work will be enrolled with the class in which the deficiency occurs. The student will not be advanced in enrollment with his class until the deficiency has been removed.

A student deficient at the beginning of a year in

courses aggregating twelve semester hours will be required to drop a corresponding number of semester hours in the regular work of the year.

RECORDS.

A record of scholarship and deportment, under the care of the Registrar, is kept for each student. The grades of scholarship are designated as follows: A (excellent), B (good), C (fair), D (poor, barely passed), E (failed, but entitled to another examination), F (failed utterly and must repeat with the next class), and Inc. (incomplete).

Each student who graduates will, on request in person, be furnished with a certified copy of his college record. Requests for such certificates, when furnished in duplicate, or thru correspondence, should be accompanied by a remittance of one dollar. Students who leave college before graduation and who are in good standing are entitled to certificates on the same terms.

REPORT.

A report from the above record is sent to the parents or guardian of each student at the end of each semester. About the middle of each semester notice is given to the student and to his parents or guardian if his work is of low grade or if he has an excessive number of absences.

REQUIREMENTS FOR GRADUATION.

Every student completing the prescribed work of any group of studies as tabulated under Outline of Groups, p. 30-55; and an original English essay (see page 114) will receive the degree pertaining to that group, either Bachelor of Arts or Bachelor of Science; provided, however, that no regular student shall carry less than sixteen or more than twenty semester hours in any semester, unless by special permission of the Faculty.

No student will be graduated who is not present at Commencement, unless he be excused by the Faculty.

MASTER'S DEGREE.

The degrees of Master of Arts and Master of Science are conferred on those having the Bachelor's degree from approved colleges, according to the following regulations:

1. The Master's degree is conferred upon graduate students on the completion of at least one year of resident work. Such students must present to the Faculty Committee on Advanced Degrees, for approval, a plan of advanced studies involving the equivalent of at least twenty-four semester hours. It is recommended that at least one-half of the course be devoted to some one subject.

2. The Master's degree is also conferred on non-resident graduates of this College. These must, however, at the beginning of their candidacy arrange with the Faculty Committee on Advanced Degrees (see page 15) a systematic course of study, and must report at stated times to the head of the department in which the subjects have been chosen.

In either case the candidate must pass examinations satisfactory to his instructors and to the committee. Previous to the final examinations the instructors in charge shall file with the committee a statement of the work done by the candidate. If the report is satisfactory, the candidate will be permitted to present himself for final examination. He shall also be required to prepare an essay or thesis upon an approved subject bearing on his principal study. This essay or thesis must be completed and submitted to the committee at least one month prior to the Commencement at which the degree is to be conferred; if accepted, it becomes the property of the College.

Graduates of this College who have devoted at least one year to graduate work in residence at other colleges or universities and have fulfilled the above requirements

may be admitted by the Faculty to the Master's degree. It may also be conferred upon college graduates who have completed courses of advanced study in professional schools, provided that the work done be in kind, grade, and amount equivalent to that required of other candidates for the same degree and that it has not been offered to satisfy the requirements for a professional degree.

HONORS.

The following honors will be awarded at the close of each year:

A. Final Honors will be awarded to members of the graduating class meeting the following conditions:

General Final Highest Honors will be awarded to those students who have maintained thruout their four years the grade of A in all of their studies.

General Final Honors will be awarded to those students who have maintained the grade A in at least half of the work of their four college years and have not fallen below the grade B in their studies of the junior and senior years.

Students entering at the beginning of the sophomore year will be awarded the same honors if for three years they meet the above requirements as to grade.

B. Department Final Honors. If the head of any department recommends a student taking a major in that department as having shown special excellence in that work, the student shall be awarded Final Honors in that department provided he does not have a grade below B in more than twelve semester hours of work in other departments.

C. Class Honors for Freshman, Sophomore, Junior, and Senior Years. Highest Honors for the designated year will be awarded to those members of these classes who have maintained the grade A in all of their studies thruout the year.

Class Honors for any particular year will be awarded to those members of the class who have maintained the grade A in at least half of the work of the year and do not have a grade below B in any of their studies for the year.

These awards are announced at Commencement and published in the next Catalog number of the BULLETIN.

PRIZES.

Muhlenberg Freshman Prize. The interest of a fund of five hundred dollars, contributed by F. A. Muhlenberg, D.D., LL.D., a former professor in this College, is given at the close of each year to that member of the Freshman Class who is found to have attained the highest grade of scholarship in Group I.

Baum Mathematical Prize. Charles Baum, M.D., Ph.D., Class of 1874, of Philadelphia, has contributed five hundred dollars, the income from which is to be given annually to that member of the Sophomore Class who shows the greatest proficiency in Mathematics.

Hassler Latin Prize. Mr. Charles W. Hassler furnished a fund, the interest of which is annually expended for the purchase of a Gold Medal, to be presented to that student of the Junior Class, who, at the end of the year, shall be rated as the best Latin scholar.

Graeff Prize. This prize was founded by Mr. John E. Graeff, Class of 1843. The interest on a fund of \$500 is awarded for the best English Essay from a member of the Senior Class, on a subject previously assigned. The decision is made by a committee appointed by the Professor of English.

In order to complete the requirements for graduation (see p. 111) each member of the Senior Class must write and submit, on or before May 1 of the Senior year, an original essay in English, in length not less than 1500 words nor more than 3,000. This essay may be submitted in competition for the Graeff Prize; provided that in

such case the subject shall be the subject announced in that contest.

Prizes in Debate. The Literary Societies of the College provide three prizes of \$36, \$24, and \$15, respectively, for the encouragement of skill in debating. The first contest takes place about the middle of November between teams chosen by the Sophomore and Freshman Classes, respectively, and the winning team is rewarded with \$15. The second contest between the winning team and a team from the Junior Class, takes place about the middle of March, and the team that wins this contest receives \$24. The third contest between the second victors and a team from the Senior Class, takes place about the middle of May, and the winners of this contest receive \$36. Winners of the prize of \$36 are excluded from further competition.

Elinore Taylor Brewer Greek Prize. The Class of 1883 has contributed the sum of five hundred dollars, the income from which is annually awarded as a prize to that member of the Sophomore Class who has done the best work in the regular Sophomore Greek Course.

Samuel Garver Latin Prize. The income from a fund of \$500 established by Rev. Austin S. Garver, A.M., a member of the Class of 1869, in memory of his father, Samuel Garver, is annually awarded to the student who has made the greatest progress in Latin during his Freshman year.

Samuel Garver Greek Prize. The income of a fund of \$500 established by Rev. Austin S. Garver, A.M., a member of the Class of 1869, in memory of his father, Samuel Garver, is annually awarded to the student who has made the greatest progress in Greek during his Freshman year.

Kuhns History Prize. Due to the generosity of Rev. Luther M. Kuhns, Litt.D., Class of 1883, an annual prize of \$25 is awarded to that member of the Senior Class who has done the best work in History.

No student shall be eligible to any honor or prize unless he has had at our own College all the work required of all students in all groups for the year or years for which the honor or prize is awarded; and (unless substitutions have been approved at the time by special Faculty action) he must have had also all the work required in his group for the year or years for which the honor or prize is awarded.

SCHOLARSHIPS AND AIDS FOR STUDENTS.

Every student joining the college unit of the Reserve Officers' Training Corps (R. O. T. C.) receives very substantial financial benefits. As outlined in detail on page 103 every member of the R. O. T. C. receives during his college course five complete uniforms (each including also hat, shirt, shoes and overcoat) valued at \$225. The cash paid direct to the student by the War Department for text-books, allowances for board, pay and traveling expenses is \$464.20. Hence the total financial benefits to each student during his college course amounts to \$689.20. As this military course, which itself is of great educational value, can be pursued without in any way interfering with the required studies in any particular Group it should not only be attractive to all students but should make a very special appeal to those who are in need of financial assistance.

Endowed scholarships worth \$30 each, and a limited number of scholarships worth \$50 each, are awarded annually to deserving students by the Finance Committee of the Board of Trustees. All applications for these scholarships must be made in writing and must state in full the reasons for the request. Such applications must be handed to the President before October 1 of the college year.

Mr. C. J. Kirschner of Hazleton, Pa., has established a scholarship endowment fund of \$10,000 to perpetuate

the memory of his son Alvan Ray Kirschner who lost his life in the world war. The income from this fund is divided into two scholarships which are awarded to students under certain conditions which give preference to those from Hazleton and vicinity. Applications for the use of these scholarships should be made directly to Mr. C. J. Kirschner, Hazleton, Pa.

An endowment fund of \$5,000 for the aid of worthy and needy students has been established by Mr. C. H. Boyer as a memorial to his father, Rev. Matthew G. Boyer, D.D., '65, for over eighteen years a most faithful and efficient member of the Board of Trustees of the College. The income from this fund is divided into five scholarships of \$50 each, awarded annually. Applications for this aid must be in writing addressed to Mr. C. H. Boyer, 29 La Salle St., Chicago, Ill., or to the President, before October 1 of the college year.

Rev. Sydney E. Bateman, M.D., Class of 1887, has established a scholarship fund of \$500, the income from which is awarded each year to a needy student preparing for the ministry. Applications for this scholarship must be handed to the President before October 1 of the college year.

The Parent Education Society controls ten scholarships, worth \$30 each, which are open to young men preparing for the ministry in the Lutheran Church. Applications for the use of these scholarships should be made to the Chairman of the Scholarship Committee, Rev. J. A. Singmaster, D.D., LL.D., Gettysburg, Pa.

A scholarship of \$350 is granted annually to an advanced student who has shown special aptitude and excellence in the study of Chemistry. The money is paid thru the College by the Du Pont Powder Company in recognition of the splendid work done in the past by our former graduates employed by that concern.

A number of other \$30 scholarships have been en-

dowed and are controlled by congregations, synods, and individuals. The Gettysburg School Board controls a \$50 scholarship established by C. W. Thompson, Esq., of Lebanon, Pa. The authorizations from those controlling these scholarships must be handed to the President before October 1 of the college year.

A considerable number of students earn part of their college fees by caring for class rooms and laboratories, and upperclassmen serve as student laboratory assistants. Thirty five cents an hour is allowed for these services.

Four upperclassmen are employed as proctors in the college dormitories, three serve on the Chapel Orchestra, one cares for the Reading Room, one looks after the athletic equipment, one sends out personal news items to newspapers and one serves as Assistant in the Registrar's Office.

The above student appointments are made by the Faculty; applications for such positions must be in writing on a form provided for that purpose by the Registrar and must be in the hands of the President before May 1st of the preceding college year.

There are many opportunities in the town of Gettysburg for students to earn money. The college authorities will be glad to assist those who desire such outside employment. Many students skilled in the use of musical instruments earn money by playing at various functions in the town and in the College. Some of the students are granted allowances by the Athletic Council for work in the Gymnasium and on the Athletic Field. A number of students earn their board by managing student eating clubs, of which there is a large number, or by waiting on the table. Others earn money by acting as newspaper correspondents.

Any student wishing to engage in business or to undertake employment during term time is required to obtain

permission from the President. Any violation of this rule is regarded as a misdemeanor.

The children of clergymen are allowed a reduction of one-half of the Tuition and General Fees, that is, a reduction of \$75.

TREASURER'S BILLS.

The bills of the College Treasurer are made out for each semester and include half of each item for the college year. The bill for any semester must be paid within six weeks from the opening of that semester.

No student will be graduated until all financial obligations to the College and for class publications and other student interests are settled, except when a student has registered a timely protest with the Faculty and the claim for relief has been allowed. No credits for college work done or statement of honorable dismissal will be certified to until these financial obligations have been paid.

COLLEGE FEES.

A Registration Fee of \$5 is required of all students on entering College for the first time and is payable to the Registrar. For the regulations in regard to registration see p. 18.

The annual charge for Tuition and General Fees is \$150. This charge is made for instruction; lectures; upkeep and use of grounds and buildings (does not include dormitory room rent); athletic activities (including free admission to all college athletic games played in Gettysburg); use of library, reading room, and gymnasium; health and sanitation service; debating and oratorical contests; and a free subscription to the "Gettysburgian."

Students not candidates for a degree and pursuing studies which total less than 16 semester hours must pay a \$10 Tuition and General Fee per course each semester.

In any course pursued for a Master's degree the charge for Tuition is \$75, when all the instruction has been given by members of the College Faculty. Of this \$25 is considered as a registration fee and is payable in advance, the balance being due one month previous to the date set for the conferring of the degree. Laboratory charges are extra. When the Master's degree is taken *in absentia* the total fee is \$25 payable in advance. Students in the Theological Seminary at Gettysburg may become candidates for the Master's degree by paying the regular registration fee of \$25; they are exempt from the payment of tuition exclusive of possible laboratory fees.

ANNUAL LABORATORY FEES.

Based on not more than three laboratory periods per week these are:

Biological Laboratory	\$16.00
Chemical Laboratory	20.00
Physical Laboratory	15.00
Mineralogy for the course	10.00
Botany for the course	5.00
Bacteriology for the course	15.00

In addition to the Chemical Laboratory Fee a charge is made for apparatus broken or not returned in good condition. In the Physical Laboratory an additional charge is made for material used and any damage done to apparatus.

ANNUAL ENGINEERING FEES.

Freshman year	\$5.00
Junior year	15.00
Senior year	15.00
Summer Course in Surveying	10.00

In addition to these engineering fees a charge is made for apparatus broken or not returned in good order. A

charge is also made for engineering apparatus used by non-engineering students.

BOARDING.

The College does not maintain a dining hall. The students receive excellent board in clubs and with private families at a cost of from \$4.50 to \$5.50 per week.

ESTIMATED COST OF A YEAR IN COLLEGE.

The expenses of a college student depend largely on the training and habits of the individual. To aid the student rooming in a College dormitory to calculate the probable cost of a year in college at Gettysburg the following estimates are submitted:

(A). ITEMS ON COLLEGE BILL.

	Low.	Moderate.	Liberal.
Tuition and General Fees	\$.150.00	\$150.00	\$150.00
Room rent and heat (half room)	11.00	30.00	40.00
Electric light (half room) ..	3.15	3.15	6.30
<hr/>			
Payable to College	\$164.15	\$183.15	\$196.30

(B). OTHER EXPENSES.

Board for 35 weeks	\$157.50	\$175.00	\$192.50
Laundry	15.00	18.00	20.00
Books and stationery	15.00	18.00	20.00
<hr/>			
Est'd cost for college year.	\$351.65	\$394.15	\$428.80

To the above should be added laboratory or engineering fees in case the student takes courses involving such charges.

COLLEGE DORMITORY ROOMS.

The following rules govern the assignment of dormitory rooms in Pennsylvania Hall, Cottage Hall and McKnight Hall.

Non-resident students are required to room in the college dormitories unless excused by the Committee on Dormitory Rooms. A non-resident student rooming outside of the dormitories will be charged \$7.50 each semester for this privilege unless there are no dormitory accommodations available or for special reasons this charge is remitted by the Faculty. Not more than two students will be allowed to room in a fraternity house.

No reservations of room beyond the actual needs of the students are permitted. No student is allowed to change his room or to take in a roommate without permission from the Committee on Dormitory Rooms and if allowed a new rental contract must be signed.

RESERVATIONS OF ROOMS BY MEMBERS OF THE STUDENT BODY.

All rooms are declared vacant May 1 of each year. On this date the reservation of rooms for the next college year begins. Students desiring to remain in the rooms that they have been occupying have that right provided they make application and sign the rental contract at the Registrar's office before May 8. After this date all rooms not reserved in this manner are open for assignment, on the days announced by the Registrar, to the members of the several classes in the following order: Juniors, Sophomores, Freshmen. Within the respective classes the order of choice and assignment is determined by lot conducted by the Registrar.

RESERVATION OF ROOMS BY NEW STUDENTS.

Rooms not reserved before May 15 will be available for

assignment, in order of the applications, to new students desiring to enter College the following September. The Registrar will reserve rooms for such students by correspondence if he is informed, at least approximately, of the kind of accommodations desired and whether or not a roommate is wanted. A deposit of five dollars with the Registrar is required from every new student reserving a room, which deposit will be deducted from his first semester bill. The rental contract involved may be signed at any time before the opening of College. Applications for such reservations should be made as early as possible both for the purpose of securing a satisfactory room and to relieve the rush at the opening in September.

DORMITORY ROOM FURNITURE.

All rooms are furnished by the occupants. Students graduating from College or changing from one room to another usually sell their furniture to the new occupants at a fair price mutually agreed upon. This plan is regarded highly desirable by the college authorities. The Finance Committee of the Board of Trustees has engaged a competent appraiser who has no direct interest in connection with the College to determine the value of the furniture in any room when asked to do so. When students are unable to agree on the price for the furniture in a room, this appraiser will serve as an expert to adjust the matter. Any failure to make an adjustment on the basis of the findings of the appraiser must be referred to the Committee on Dormitory Rooms for final action.

ROOM RENT.

The charge for room rent, including steam heat, is given below for each room in the above-mentioned dormitories, and covers the period commencing the Saturday before College opens in September and ending the Saturday after College closes in June, with the exception of the Christmas vacation. The occupants of a room pay

equal parts of the rental. Not more than two students are allowed to occupy one room or suite except in the case of some of the larger suites. In Pennsylvania Hall the designations are E for east division, M for middle division, and W for west division. McK indicates McKnight Hall; C, Cottage Hall.

\$16.00: 354C.

\$22.00: 255, 256, C.

\$24.00: 106, 108, W; 120, 122, E.; 357, 358, 360, C.

\$26.00: 105, 107, W; 119, 121, 123, E.

\$30.00: 353, 362, C.

\$32.00: 103, W; 125, E.

\$34.00: 101, W; 127, E.

\$38.00: 340, McK.

\$44.00: 111, 117, 118, M; 140, McK; 361-363, C.

\$46.00: 104, W.

\$52.00: 206, 208, 306, 308, 406, 408, W; 210, 410, M; 220, 222, 224, 320, 322, 324, 420, 422, 424, E.

\$54.00: 205, 207, 305, 307, 405, 407, W; 219, 221, 223, 319, 321, 323, 419, 421, 423, E; 335, 336, 343, 344, McK.

\$56.00: 153, 359, C.

\$60.00: 240, McK.

\$62.00: 337, 338, 341, 342, McK.

\$68.00: 204, 304, 404, W; 211, 217, M; 226, 326, 426, E.

\$72.00: 202, 203, 302, 303, 402, 403, W; 225, 228, 325, 328, 425, 428, E.

\$74.00: 201, 301, 401, W; 227, 327, 427, E; 157, 185 C.

\$76.00: 233, 234, 245, 246, McK.

\$78.00: 257, 258, C.

\$80.00: 154, and suite 252-254 C.

\$88.00: 159, 160, 259, 260, C.

\$96.00: 218, 312, 318, 412, 418, M; (suites of two rooms).

\$100.00: 161, 162, C; 134, 146, McK; suite 251-253 C.

\$104.00: 133, 137, 138, 141, 142, 145, McK.

\$110.00: 411, 417, M; (suites of two rooms).

\$112.00: suites 331-333, 332-334, 345-347, 346-348, McK.

\$118.00: 242 and 244, McK; 241 and 243, McK; 235 and 237, McK; 236 and 238, McK; (suites of two rooms).

\$124.00: 261-263, 262-264, C.

Rooms 111, 117, 118, 218, 312, 318, 411, 412, 417, 418, M, include a large study and a good-sized bedroom. Odd numbers are on the south side of the building in Pennsylvania Hall and on the west side of the building in McKnight Hall.

The cost of electric light, eighteen cents per week for each 40-watt Tungsten lamp or its equivalent, is charged on the regular College bills. Any damage done to a room will be charged up against the occupants. Only the Superintendent of Buildings and Grounds is allowed to change the locks on doors. The rooms must at all times be accessible to the college authorities. The occupants of a room will be held personally responsible for the order maintained in that room. Students disregarding Faculty or Student Council Dormitory Regulations will forfeit their rights as occupants. A janitress is employed by the College to clean thoroly and set to rights every student room in the dormitories periodically; this service is without cost to the students. The Registrar will be glad to furnish any additional information that may be desired about dormitory rooms as well as rooms in the homes of families living in the town.

STUDENT PROPERTY.

The College disclaims all responsibility for the care or safety of any property belonging to students. With the exception of furniture, mattresses, tacked-down carpets and window shades, any student property left in a dormitory room during the summer vacation must be securely packed in barrels or boxes distinctly marked with the owner's name and the number of his room. No property should be left in closets or bureau drawers. This is to insure against possible loss and to facilitate the cleaning of the rooms.

MATERIAL EQUIPMENT.

LIBRARIES.

The College Library contains about 30,000 volumes, besides numerous unbound pamphlets. It is a regular depository of the United States Government and the Government of the State of Pennsylvania. Several hundred volumes of public documents are annually received from these sources.

The Library is available to all students under established regulations. During term time it is open for consultation and the drawing of books eight hours each week day, except on Saturday, when it is open for four hours. The librarian and his assistants are always ready to aid the students. The opportunities for the use of the Library are continually being increased by means of a systematic organization and the building up of a complete and attractive library of reference.

Mrs. Edwin Swift Balch, of Philadelphia, has donated \$2,000 for the establishment of the "James Macfarlane Fund, Class of 1837", the annual income from which is expended in the purchase of books on geology and kindred subjects. Mrs. Balch is the daughter of James Macfarlane and established this endowment in his Alma Mater to commemorate the centenary of his birth Sept. 2, 1819, at Gettysburg. James Macfarlane received the degrees of A.B., M.A., and Ph.D., from Pennsylvania College. He was a member of the bar, an engineer, a geologist, and the author of several scientific books and many scientific articles.

In the same hall with the College Library are the Libraries of the two Literary Societies. They comprise a

large number of well-selected and standard volumes, which are annually increased thru the income of separate funds. The Philomathean Library contains at present 7,200 volumes; the Phrenakosmian Library over 7,850 volumes. These libraries are accessible to the members of the societies under their respective regulations, and are open for the issue of books on Wednesday at 4 P. M., and Saturday at 11 A. M., during term time. Several departmental libraries are also maintained.

READING ROOM.

The Reading Room is well supplied with daily and weekly papers and leading literary and scientific periodicals, thus enabling the student to become acquainted with current events and contemporary, scientific, literary, and other cultural movements.

LABORATORIES.

The Biological Laboratories on the second floor of Glatfelter Hall consist of two large, well-lighted, communicating rooms. They are supplied with twenty-five fine microscopes, and all the other appliances necessary in carrying on the work of the course outlined in the Department of Biology.

The Chemical Laboratories in the Chemical Laboratory Building, as described on page 132, are amply equipped with all the conveniences and apparatus and supplies that are desirable in the requirements for general and analytical chemistry, including work in organic preparations, proximate analysis, examination of water, and other special subjects.

The Physical Laboratory. The lecture room is provided with a large table with sink, water, gas, and electrical connections; apparatus supports, blackboard, charts, and black curtains and a hand-painted screen for stereopticon work. The laboratories, comprising six

rooms for general work, besides photographic dark rooms, store room, and storage battery room, and the lecture apparatus room are equipped with modern and carefully selected apparatus for both elementary and advanced work. Alternating and direct electric current is supplied at different points by means of a central switch board, a motor generator, and a storage battery. The apparatus includes a Geryk double cylinder oil immersion air pump, high grade balances, spectrometers, photometer, and stereopticon; and in electricity, D'Arsonval galvanometers, Wheatstone bridges, potentiometer, voltmeters, standards of resistance, capacity, electro-motive force, and self-induction, ammeters and voltmeters for direct and alternating currents (all of the best make); a complete dynamo and motor set illustrating different styles of direct and alternating current machines (induction, synchronous, three-phase, etc.); an induction coil giving an 8-inch spark, high frequency coils, electric wave apparatus, and telegraph, telephone, and wireless telegraph outfits, and Kathode ray and X-ray tubes.

ENGINEERING EQUIPMENT.

The equipment in the Engineering Departments is modern and adequate and is being augmented as necessity demands.

Instruction in mechanical drawing is given in a large room in Thaddeus Stevens Hall. The department is well equipped for the purpose and is supplied with drawings illustrating the best recent practice.

The surveying equipment is adequate for the purposes of practice in all kinds of surveying. It includes, besides a number of transits and levels, a plane table, traverse board, sextant, planimeter, level and stadia rods, tapes, etc.

The facilities for materials testing include a 100,000 pound Riehle universal testing machine, with the neces-

sary measuring instruments for the determination of the physical properties of steel, cast iron, wrought iron, timber, concrete, etc. There is also a cement laboratory, with a Riehle tensile briquette machine of 1,000 pounds capacity, and a variety of other apparatus for making all the standard physical tests of cement, sand, and mortar.

The pattern shop, located in a commodious room in the basement of Glatfelter Hall, is supplied with speed lathes and an oilstone grinder, also numerous benches and hand tools, all of the most modern type. In addition there has been provided foundry equipment of an elementary nature for illustrating the fundamental principles of moulding. The College has installed a medium-sized engine lathe, a drill press, emery wheels, and numerous vises and bench tools. A portable forge with the usual collection of small tools has been added.

Thru the courtesy of manufacturers in the vicinity of Gettysburg, arrangements have been made whereby students may spend a short time as apprentices in well-equipped machine shops. By such co-operation it is hoped that the students' knowledge of manufacturing processes will be increased to a greater extent than would be possible in a course of shopwork conducted entirely in a college laboratory.

An electrical engineering laboratory has been established. There are facilities for work in both direct and alternating current phenomena. The apparatus includes several direct current motors and generators, a rotary converter, a synchronous motor, several polyphase and single phase induction motors, a number of transformers, and an assortment of direct and alternating current measuring instruments.

In connection with the College heating and pumping plant there is available for commercial testing such equipment as boilers, a gas engine, and two pumps. As necessity demands further apparatus will be added.

MUSEUM.

The Museum contains varied collections of fauna and flora and minerals, all of which are freely used in instruction. The Mineralogical Cabinet contains over 6,000 specimens, including not only very full suites of the more common and more important minerals, but also good specimens of many of the rarer minerals. The collection in Lithology numbering 3,000 specimens, and of iron in Metallurgy, have, by recent additions, become fairly representative in the most important departments of these sciences. The Botanical collection of 6,000 specimens, mainly presented by Miss Elizabeth C. Morris, of Germantown, Pa., is well arranged and contains a full representation of American Flora. A beginning has been made of a Chemical Museum—to contain specimens of raw and manufactured materials in chemical industries. Friends of our institution can greatly aid us by making additions to these collections.

BUILDINGS.

Pennsylvania Hall, erected in 1836-38, was remodeled and improved in 1889. It contains eighty-six rooms for students, many of them *en suite*, so that those who may wish to do so can have separate study and sleeping rooms. In this building are also the Reading Room and the auditorium now used by the College Y. M. C. A. The rooms are all heated by steam and lighted by electricity. Sinks with running water are located on every floor, and on the first, second, and third floors are complete lavatories with hot and cold water connected with the College system of water-works.

McKnight Hall, erected in 1897, is a dormitory building of three stories accommodating about fifty students. It is named in honor of Harvey W. McKnight, D.D., LL.D., Class of 1865, Fourth President of the College. It is finished entirely in hard wood, is heated by steam,

lighted by electricity, has hot and cold water on each floor, and lavatories in convenient places. The first floor has eight rooms with spacious closets. These rooms may be used by one or two occupants, as preferred. On the second floor all rooms are *en suite*, each suite consisting of a study with one bedroom or two. These are also provided with closets. The third floor is divided into sixteen single rooms.

Cottage Hall was built in 1856 as a double house for professors. In 1914, because of the great need for more dormitory accommodations due to the increase in the number of students, it was transformed into a College dormitory of thirty rooms. As it is very advantageously situated on the campus near the main gateway, and is fitted up with all modern conveniences, rooms in this building are among the most desirable to be had. .

Glatfelter Hall, erected in 1888-89, is used for general college purposes. It is named in honor of the late P. H. Glatfelter, of Spring Grove, Pa., a former trustee, who with his family has contributed largely to the College. On the first floor are the library and reference rooms, the Registrar's office, and recitation rooms. The second floor contains five recitation rooms, the biological laboratories, a drafting room, and a large Social Hall. A large museum and four recitation rooms are on the third floor. In the north wing of the third floor is the hall of the Philomathean Literary Society; in the south wing the hall of the Phrenakosmian Literary Society. In the basement are the laboratories of the Department of Physics with the recitation rooms directly above. The newly-equipped Engineering Laboratory and Shops occupy the entire north wing of the basement.

Thaddeus Stevens Hall, erected 1867-68, is a three-story brick building fronting on Carlisle street. It is heated by steam and lighted by electricity, and supplied with pure artesian water, hot and cold. On the first

floor are class rooms and the R. O. T. C. armory. In 1920 this building was very materially improved, in particular the second and third floors, which were entirely remodelled into a thoroly up to date dormitory for boys attending Gettysburg Academy.

The Brua Memorial Chapel, erected in 1889-90, is the gift of the late Col. John P. Brua, U. S. A., as a memorial to his parents. This building is used for daily prayers, for Commencement exercises, lectures and other occasions requiring a large audience room.

The Chemical Laboratory is a frame building, erected in 1872 and in 1890 converted to its present use. It contains on one floor a large lecture room, an office, store-rooms, chemical-room, balance-room, and three laboratories—providing for two hundred and sixty persons working individually. The building is fitted with the most approved appliances; gas and water at each desk; there are ample hoods, a water-distilling apparatus and large sand bath, and other necessary apparatus. The balance-room contains balances set on pillars especially built for the purpose. In the basement and in the attic are store-rooms. On account of the recent large increase in the number of students an addition to the Chemical Laboratory was built in 1916.

The Astronomical Observatory, erected in 1875, is furnished with an achromatic telescope having an object glass of six and one-half inches, with a transit instrument, chronometer, and other astronomical appliances.

The Gymnasium has on the first floor ample dressing rooms and bathing facilities, and a baseball cage. On the second, or main floor, a class of sixty members can be accommodated for gymnastic drill. This floor is partly enclosed for basketball purposes. The selection of specialized apparatus in light and heavy gymnastics is varied and complete. The office, where all physical tests and measurements are taken, is also on this floor,

and is furnished with a full set of anthropometric apparatus. The gallery has a good seating capacity for spectators.

The Gymnasium is open every week day from 10 A. M. to 10 P. M., and the time is apportioned between regular class practice, general practice, and games.

The Weidensall Y. M. C. A. Building is now under construction and it is expected that it will be ready for occupancy some time during the scholastic year 1921-1922. It is located immediately north of the Chemistry Laboratory and will be built of brick, colonial style. On the first floor the two main entrances, one from the east and the other from the west, will admit to a large and attractive lobby and reception room. Here students will meet for social intercourse and may entertain visiting members of their families and friends. Adjoining there will be a Ladies' Rest Room for the accommodation of women visitors. The College Reading Room, the Recreation Room, a kitchenette, and the Y. M. C. A. Office will be located on this floor. On the second floor there will be a commodious assembly room especially designed for prayer services and other religious meetings for students as well as the Bible Study Room, the Mission Study Room, a Committee Room, and living quarters for the resident Y. M. C. A. Secretary. The chief feature of the basement will be a swimming pool 20 x 60. There will also be a locker room, a shower room, a room for the heating and filtering plant, and a room for the attendant. There will be lavatories conveniently located on each floor. The building is named in honor of Robert Weidensall, LL.D., Class of 1860, and the cost of construction has been assumed by the Woman's League of Pennsylvania College.

The Boiler House supplies the steam required for heating all the College buildings.

Besides these buildings there are on the campus the President's house, four halls erected by Greek Letter Societies, and a house for janitors.

A professor's house, donated by Professor George D. Stahley, M.D., class of 1871, has been erected on College ground, corner of Carlisle and Stevens Streets.

Athletic Field. Immediately north of the College buildings is the athletic field, which is carefully graded and securely inclosed and covers an area of over seven acres. It affords room and facilities for all kinds of out-door sports. To the west of the field more than a dozen tennis courts have been laid out for the use of the students.

CLASS MEMORIALS.

As testimonials of their love for their Alma Mater and substantial tokens of gratitude for what she has done for them, the classes indicated below have donated memorials to her as follows:

Class of 1883. On the thirtieth anniversary of their graduation the members of this class donated \$500 to the College, the income from which is awarded annually, under the name of the Elinore Taylor Brewer Greek Prize, to that Sophomore who does the best work in the regular Greek class.

Class of 1893. On the twentieth anniversary of their graduation the members of this class presented the fine memorial gateway at the main entrance of the College campus. The approximate cost of this imposing and artistic structure was \$1500.

Class of 1899. On the fifteenth anniversary of their graduation the members of this class presented the furnishings of the class-room for the Department of Philosophy and Education and a departmental library for that department. This equipment, costing nearly \$600, was presented as a Class Memorial to their class-mate,

the Rev. Jacob Hiram Straw, who died on the African mission field.

Class of 1902. This class presented the College a concrete walk extending from the entrance into McKnight Hall to the driveway in front.

Class of 1906. This class gave a concrete walk that runs across the entire front of Pennsylvania Hall connecting the various entrances.

Class of 1907. This class paid for the wiring of all the halls and rooms of Pennsylvania Hall for electric light.

Class of 1912. This class erected the handsome light post in the center of the campus, with its cluster of five large electric light globes, and put down a concrete walk extending from this central point to Pennsylvania Hall, much of the actual labor being done by the members of the class.

Class of 1913. The gift of this class was a concrete walk which extends from Pennsylvania Hall to Glatfelter Hall connecting with the Gymnasium, and widening into a plaza in front of the entrance to Glatfelter Hall, with two handsome electric lamp posts on the two outer corners of the plaza. This class also put down part of the concrete walk in front of Thaddeus Stevens Hall.

Class of 1914. This class gave a concrete walk which reaches from the main gateway to the center campus light, together with three walks extending to Brua Chapel.

Classes of 1916 and 1917. These two classes presented a concrete walk reaching from Thaddeus Stevens Hall to the corner of Carlisle and Stevens Streets. All labor of putting down this walk was done by the members of these classes.

STUDENTS' INTERESTS.

LITERARY SOCIETIES.

Two literary societies are connected with the College, the Philomathean and the Phrenakosmian. These exert a remarkably favorable influence on the intellectual and social culture of their members. The exercises consist of essays, orations, debates, and music. The acquaintance with parliamentary law and the practice in clear thought and effective speech which are here gained, make these societies excellent schools in good citizenship. Each society has a spacious hall on the third story of Glatfelter Hall, conveniently and handsomely furnished. Their sessions are held every Friday evening. Every student should become an active member in one of these societies.

DEBATES AND ORATORICAL CONTESTS.

During the year there are debates between teams representing the different classes, also between teams of the literary societies. The College is also represented in the Intercollegiate Oratorical Union, being associated with Franklin and Marshall, Ursinus, Muhlenburg, and Swarthmore in an annual oratorical contest.

Y. M. C. A.

The Young Men's Christian Association of the College, the second one organized in the world, is an active agent in promoting religious interests among the students. Each Sunday morning and Thursday evening a public meeting is held, addressed by invited guests or students. Various Bible and Mission Study classes are organized

in college classes, fraternities, and other special groups. The Woman's League of Pennsylvania College are now conducting a campaign for the securing of \$60,000 towards the erection of a College Y. M. C. A. Hall to serve as a religious and social center for the student body. The corner-stone of this building has been laid and every effort will be made to have it ready for occupancy in September, 1921.

LECTURES.

A series of free public lectures is delivered each year by members of the Faculty and others prominent in some field of general interest.

The Y. M. C. A. conducts at very reasonable cost a series of interesting lectures and musical entertainments. Occasional lectures or addresses by prominent men are delivered before the student body.

MUSICAL ORGANIZATIONS.

Active and well trained choral and instrumental musical organizations consisting of a band, an orchestra, a guitar and mandolin club, and a glee club, add to the pleasure of their members and of the audience at their public exhibitions. These clubs usually take a ten days' trip during the winter.

ATHLETICS.

The various college athletic sports, football, baseball, basketball, field sports and tennis, are well organized. They are recognized as an important part of college life and receive encouragement, but under such regulations as it is believed will prevent them from becoming a possible source of demoralization to the student body and from interfering with the primary work of the institution. The plan under which these sports are conducted gives

the opportunity and encourages every student to take part regularly in some out-door exercise.

Students are permitted to participate in any or all branches of athletics unless parents or guardians have notified the Faculty to the contrary.

PRESS CLUB.

The chief aim of the Press Club is to bring the various interests of the College before the public thru the daily papers.

PUBLICATIONS.

THE PENNSYLVANIA COLLEGE BULLETIN is published by the Faculty four times during the year.

"The Gettysburgian," under the control of the student body, is published weekly, and makes a specialty of College and alumni news. A room in McKnight Hall has been provided as an office for the editorial staff of the "Gettysburgian."

"The Y. M. C. A. Hand-Book," issued at the opening of each college year, gives valuable information and suggestions to incoming students.

"The Spectrum," an annual publication by the Junior Class, contains pictorial representations of the College with its various organizations and surroundings, and useful information about students and alumni.

All the periodicals aim at enlarging the means of communication between the Collège and its graduates, former students and friends. These enterprises are cordially commended to the patronage of those interested in the welfare of the institution.

STUDENT COLLEGE REPRESENTATIVES.

A Student entering Pennsylvania College of Gettysburg from another college is required to be registered as a

student here for a period of one calendar year before he is permitted to take part in intercollegiate athletics.

Any student whose work, reckoned from the beginning of the semester, is reported to the Faculty at any time during the semester as being below Grade D in two or more courses, will be debarred (as long as this condition exists) from representing the College in any student organization.

ADDRESSES OF ALUMNI.


The College is anxious to keep in touch with its alumni and ex-students not graduates, and requests that all changes in address be sent to the Registrar.

TEACHERS.

The attention of school boards, and others desiring teachers is called to the fact that it is frequently in the power of the Faculty to recommend suitable candidates. Many graduates successfully fill important positions in public and private institutions. The College course for teachers is arranged to meet the requirements of the School Code of Pennsylvania, thus securing the State Life Certificate for the graduates of the College. See page 74.

FORM OF BEQUEST.

I give, bequeath, and devise to "The Trustees of Pennsylvania College, of Gettysburg, in the County of Adams," in the State of Pennsylvania, and their successors and assigns forever, the sum of —— (or shares in the bank of ——, or any other personal property or real estate, as the case may be), to be applied to the Endowment Fund of the Institution.

 A bequest to a benevolent corporation, to be legal, must be made, in Pennsylvania at least thirty days, and

in New York at least sixty days, before the death of the Testator; and should be signed by two witnesses not officially related to the College.

ALUMNI ASSOCIATIONS.

The Alumni Association of Pennsylvania College holds its regular annual meeting Wednesday afternoon of Commencement Week. In 1876 the Board of Trustees granted the Association the privilege of nominating six of their number to membership in the Board, and of maintaining this number as vacancies occur.

The officers of the association are:

President:

CHARLES J. FITE, '98Pittsburgh, Pa.

Secretary:

DR. LOUIS S. WEAVER, '99.....York, Pa.

Treasurer:

EDGAR A. CROUSE, '03Gettysburg, Pa.

The various district alumni associations are active and potential factors in promoting the interests of the College and bringing the College to the notice of prospective students.

GETTYSBURG ACADEMY.

This is a boarding school offering a four year course for students preparing for college and also a general or academic course for students who do not expect to enter college. As a training school for boys Gettysburg Academy seeks to cultivate habits of neatness and punctuality as well as industry and accuracy in study. It attaches the greatest importance to the culture of the heart and to the development of those manly virtues that make the truly Christian gentleman. The location, equipment, environment and ideals of the school are favorable for such training.

HOME LIFE.

It is the purpose of those in charge to give every student a happy, healthful home life. The Masters live in the school with the boys and are intimately associated with them both in their work and in their play. The large Living Room with its cheerful fire-place and comfortable furnishings is the gathering place of the boys when not on duty. Here is cultivated the "family spirit" of the school.

THE MAIN BUILDING.

A fine new structure known as The Main Building is now completed and occupied. This building is of beautiful, Colonial architecture and fronts one hundred and fifty-six feet on Carlisle Street. Into its construction and equipment have gone the very best and latest ideas that science, sanitation and school experience can give. The building is heated by a vacuum steam system from

the central plant and lighted thruout by electricity. The plumbing is of the most approved sanitary design.

The first floor contains large, airy class-rooms, lavatory with hot and cold water supply, shower baths and a locker-room. There are also a number of rooms for students.

The second or main floor contains the large Living Room beautifully finished in Colonial style with an ample fire-place, tiled floor and comfortable furnishings. This provides a useful and delightful center for the school life. To the south of this is the large Chapel and Study Hall. Here are held the religious exercises, the literary society meetings and certain study periods. To the north is the Dining Hall with a capacity of one hundred boarders. Here the Masters and students take their meals together. On this floor is also the modern sanitary kitchen equipped with the best devices and machinery for the preparation of food. The table is abundantly furnished with wholesome, well-cooked food fresh from the rich farming and fruit country of the vicinity. Only pasteurized milk and cream is served; only pure filtered water and manufactured ice is used. The excellence and cheapness of food supplies in Adams County make it possible to furnish a very good table at very low rates. Near the Living Room are the office of the Headmaster, the study-hall for girls who attend as day students, and a cozy reading room. The reading room is supplied with a large number of magazines and papers and is open every day for the use of the students.

The entire third floor contains rooms for the students and Masters. There are single and double rooms. On this floor there is another lavatory with hot and cold showers, drinking-font, and all modern toilet conveniences.

THADDEUS STEVENS HALL.

This building has been completely remodeled and converted into a modern dormitory. The second and third floors have been torn out and rearranged into large airy rooms, single and double, facing east and west. This building affords additional accommodations for twenty-five students and two Masters.

ADMISSION TO COLLEGES.

Gettysburg Academy is an accredited secondary school. All colleges admitting students by certificate accept its scholarship credits for entrance.

EXPENSES.

The rate for boarding students for the full school year is \$350 or \$380 or \$425 according to the size and location of the room selected. The school year is divided into two equal semesters as follows:

	Lowest Rate	Minimum Rate	Highest Rate
First Semester	\$175	\$190	\$212.50
Second Semester	175	190	212.50
			<hr/>
			\$425.00

The amount of each semester bill is payable in advance at the beginning of the semester. *In case of withdrawal or suspension no payment will be accepted for less than one-quarter of the fees for the school year. If the student withdraws or is suspended before the end of the first half of a semester he will receive a refund of one-half the amount he has paid for that semester.*

These charges cover tuition, board, furnished room, heat, electric light, pew rent, use of athletic field and tennis courts, gymnasium, library, reading room and athletic

fees. The money received from the athletic fees (\$8 for each boarding student) is administered by a committee composed of faculty and student members for the benefit of the athletic interests of the school.

The Academy catalog containing cuts of the buildings and detailed information will be mailed upon request to

THE HEADMASTER OF GETTYSBURG ACADEMY,
Gettysburg, Pa.

STUDENTS IN COLLEGE 1920-1921

GRADUATE STUDENTS.

Non-resident.

Bowers, Ross Eldon
 Frommhagen, Frederick Carl
 Hufford, Jane
 Keckler, Grover Patterson
 Lighty, Harry Davis
 Sammel, William Raymond

Cortland, N. Y.
 Moundsville, W. Va.
 Reading
 Altoona
 Dunkirk, N. Y.
 Newcastle

Resident.

Albig, John William
 Becker, Horace Gilbert
 Buedinger, William Anton
 Fisher, Nelson Franklin
 Geiger, C. D.
 Gruber, Charles
 Hankey, Ralph Lee
 Harbaugh, Raymond Welty
 Hilner, Howard Kauffman
 Holman, Edward Lee
 Kattenhorn, Christian Charles
 Keller, Lloyd Monroe
 Knight, Grant C.
 Lamont, Bruce Floyd
 Miller, George Reich
 Miller, Harman Frederick
 Putman, Dwight Frederick
 Saul, Harry Luther
 Schoning, Arnt L.
 Schwartz, Perry Dean
 Shank, John Jay
 Sharetts, John Lloyd
 Widder, George McAllister

McKeesport
 Hanover
 Jersey City, N. J.
 Milton
 Gettysburg
 Philadelphia
 York
 Buena Vista Springs
 Harrisburg
 Blain
 Newark, N. J.
 Shrewsbury
 Gettysburg
 Hazleton
 Harrisburg
 Baltimore, Md.
 Somerset
 Trenton, N. J.
 Chicago, Ill.
 York New Salem
 Waynesboro
 Gettysburg
 Harrisburg

SENIOR CLASS.

Class of 1921.

Candidates for the Degree of Bachelor of Arts.

P. Indicates Pennsylvania Hall; M. McKnight Hall; C. Cottage Hall.

Group

Albig, John William, Jr.
 Carlson, Oscar Wilhelm
 Coble, Oliver Dewey

2 McKeesport
 2 McKeesport
 1 Williamson
 145

Druid House
 Druid House
 411 P

Cook, Roderick Walker	2	Dillsburg	301 P
Cooper, Henry Bowman	3	Camp Hill	246 M
Dulebohn, George Roscoe	1	Mason-Dixon	318 P
Eichelberger, Percy Samuel	3	Gardners	33 Academy
Endres, Joseph Earl	1	Huntingdon	341 M
Falkenstein, Elwood S.	1	York	306 P
Gardner, Glenn Markley	2	Gettysburg	154 York St.
Gresh, Levi David	3	Boyertown	302 P
Hershey, Charles Edward	1	York	218 P
Hollinger, Edith Deardorff	2	Gettysburg	R D 10
Holman, Edward Lee	3	Blain	401 Baltimore St.
Houser, John Raymond	1	Ruffs Dale	305 P
Kerchner, Adelaide Marion	1	Lineboro, Md.	218 N. Stratton St.
Lauver, Marie Nayetta	2	Altoona	Stevens St.
Lind, Ralph Winfield	1	Altoona	407 P
Livengood, William Potts	2	Birdsboro	325 P
Miller, Anna Harriet	2	Gettysburg	536 Baltimore St.
Myers, George Israel	1	Seven Valleys	411 P
Power, Genevieve Agnes	2	Gettysburg	316 Baltimore St.
Redcay, Paul Irvin	1	Hanover	321 P
Shaulis, Samuel Sylvester	1	Somerset	319 P
Sheads, Ida Salome	2	Gettysburg	115 N. Stratton St.
Sheads, Robert Emory	3	Gettysburg	115 N. Stratton St.
Showe, Lawrence Martin	1	Mason-Dixon	227 P
Shumaker, Stella Barton	1	Gettysburg	28 Chambersburg St.
Woodward, Luther Ellis	1	Walnut	211 P
Zeiders, Ruth Viola	2	Gettysburg	204 Carlisle St.

Candidates for the Degree of Bachelor of Science.

Baum, Paul Donkel	4	Lemoyne	307 P
Beers, George Lisle	10	Indiana	260 C
Boath, William Frederick	4	Harrisburg	312 P
Bortner, Ralph Adam	4	Glen Rock	118 P
Buedinger, William Anton	4	Jersey City, N. J.	318 P
Buhrman, Samuel Ross	5	Chambersburg	161 C
Crissman, Lyall Nichols	7	Elkins, W. Va.	
Eberly, Harry Bell	6	Chambersburg	346 M
Emanuel, Daniel Victor	8	Harrisburg	142 M
Etshied, Karl William	2	Lemoyne	307 P
Gehauf, Herbert Hensey	4	Frostburg, Md.	360 C
Gülck, Georg Krohn	5	Aalborg, Denmark	20 Academy
Harbaugh, Raymond Welty	4	Buena Vista Springs	207 P
Hinman, Burton Louis	4	Westville, Conn.	133 M
Hurd, Mason Montraville	6	Williamsport, Md.	244 M
Klingaman, Foster Ellis	4	Berwick	428 P
Lang, Robert Luther	6	Williamsburg	Seminary
Lauver, William Wieand	5	Altoona	405 P
Lerew, Joseph Austin	6	Dillsburg	238 M
Miller, Carl Franklin	4	Juniata	135 N. Washington St.
Miller, Charles Kitzmiller	9	Gettysburg	536 Baltimore St.
Miller, Maurice Harry	4	Akron, Ohio	461 Baltimore St.
Mumma, Richard Good	6	Steelton	333 M
Mumper, Jacob Harold	9	Gettysburg	536 Baltimore St.

Nicely, John Harris	4	Montoursville	218	P
Noll, Paul Edward	7	Green Park	241	M
Pfeffer, Fred George	4	Gettysburg	101	P
Rice, John Stanley	6	Arendtsville	145	M
Shank, John Jay	4	Waynesboro	138	M
Sheffer, John Allen	4	Spring Grove	119	P
Starr, Allen Edward	7	Littlestown	142	M
Stauffer, Russell Deardorff	9	Gettysburg	R D	7
Stewart, Joseph Baird	7	Philadelphia	312	P
Trundle, Alfred Graham	5	Frederick, Md.	237	M
Yohe, David Abraham	4	Gettysburg	38	Water St.
Ziegler, Earl Emerson	4	York	323	P
			Seniors	66

JUNIOR CLASS.

Class of 1922.

Candidates for the Degree of Bachelor of Arts.

Group

Anderson, Matilda Joanne	2	Altoona	218	N. Stratton St.
Bower, Philip	1	Table Rock	R D	6
Dimpsey, Frank James	2	New Freedom	107	P
Doub, John Wilfred	2	Middletown, Md.	258	C
Floto, Norwood Shipley	3	Connellsville	106	P
Foulk, Paul Levi	1	Littlestown	358	C
Fuhrman, Arthur Alphus	1	Hanover	18	Chambersburg St.
Gotwald, David Etter Small	1	York	262	C
Guss, Walter Dimm	1	Philadelphia	401	P
Keck, George Harold	1	West Newton	Druid	House
King, Paul Edward	1	Littlestown	410	P
Lawyer, Paul Ezra	2	Westminster, Md.	121	P
Little, John Harold	1	Hanover	319	P
Medsger, Ralph Hayden	2	Scottdale	208	P
Mertz, Walter Louis	3	Baltimore, Md.	205	P
Minich, William Gordon	3	Loysville	421	P
Nagele, Carl Robert	1	Conshohocken	418	P
Rice, Rueil Keedy Greitzner	3	Seven Stars	233	M
Saas, William Herman	1	East Clarksburg, W. Va.	104	P
Saylor, Howard Melvin	3	Johnstown	129	N. Washington St.
Spangler, Ruth Anna ✓	2	Gettysburg	18	Chambersburg St.
Taylor, Miriam Daisy ✓	2	Gettysburg	501	W. Middle St.
Weaver, Constance Cornelia ✓	2	Gettysburg	66	W. High St.
Wertman, Roscoe Edwin	2	Bloomsburg	427	P
Willard, Pierce Main	1	Frederick, Md.	327	P
Wolf, Ruth Sheely ✓	2	Westminster, Md.	27	Stevens St.

Candidates for the Degree of Bachelor of Science.

Baker, Michael Daniel	4	Waynesboro	261	C
Brenneman, John	4	York	161	C
Burgess, Milton Valentine	5	Crafton	320	P

Daugherty, Frank Luther	6	Butler	134	M
Davis, Donald Glen	10	Newberry	251	C
Derr, George Harry	6	Lairdsville	146	M
Dollman, Warren Andrew	5	Eyer's Grove	126	P
Gentzler, Jennings Mason	4	York New Salem	206	P
Gibson, Joseph Wilbur	5	Indiana	360	C
Gilbert, Paul Steck	5	Potts Grove	360	C
Gingerich, Lester Earl	7	York	127	P
Keiser, Leon Paul	6	Mifflintown	238	M
Krebs, William Albert	9	Hanover	124	P
Kyle, James William, Jr.	6	Mifflintown	337	M
Leavy, John Peter	7	Harrisburg	312	P
Mahaffie, Ralph	4	Renovo	A. T. O. House	
Mathias, Robert Burns	5	Mt. Washington, Md.	203	P
McBride, Henry Ellsworth	4	Brunswick, Md.	328	P
McCreary, Henry Clay	6	Indiana	241	M
Miller, Charles Douglas, Jr.	6	Pottsville	141	M
Mumma, Elsie	6	Hummelstown	N. Stratton St.	
Mundorff, Roy McClellan	4	Gettysburg	Centre Square	
Olinger, Paul Francis	10	Hanover	122	P
Overmiller, Howard Andrew	6	Spring Grove	326	P
Oyler, Robert Monroe	5	Gettysburg	218	York St.
Panebaker, David Edward	4	Hanover	420	P
Pegg, Edwin Larue	4	New Providence, N. J.	408	P
Reller, Louis Smith	5	Pittsburgh	137	M
Richards, James Smiley	9	Altoona	142	M
Ruder, Carl Letsig	5	Union City	201	P
Rudisill, Donald Everett	7	Altoona	425	P
Ryder, Charles Franklin	4	Chambersburg	402	P
Sahm, Russell Luther	7	Mahaffey	425	P
Sieling, Charles Small	4	Railroad	153	P
Smith, Roger Barrick	4	Frederick, Md.	428	P
Spangler, George William	6	Harrisburg		
Weaver, Leonard Ray	10	Pottsgrove	408	P
Weaver, William Greenberry	6	Gettysburg	261	Baltimore St.
Winebrenner, Leroy Hartzel	9	Gettysburg	783	Baltimore St.
Wolfe, Edgar Leroy	10	Dillsburg	301	P
			Juniors	66

SOPHOMORE CLASS.

Class of 1923.

Candidates for the Degree of Bachelor of Arts.

Group

Bartow, Hazel Kathryn	2	Punxsutawney	Broadway	
Clare, Richard Henry	2	Gettysburg	243	York St.
Diehl, William Clarence	1	Clear Spring, Md.	228	P
Erhard, Wm. Melanchthon	1	Juniata	304	P
Eshenour, Theodore Wilbur	1	Harrisburg	336	M
Fasold, Charlotte Kathryn	2	Pillow	113	Broadway
Geiselman, Robert Clare	1	Gettysburg	414	E. Middle St.

Geiser, Dixon Hoover	3	Pen-Mar	261	C
Hafer, Merle Bowers	1	Chambersburg	402	P
Hanks, Edgar Burnell	3	Gettysburg 114	Chambersburg St.	
Hesser, Harvey Allan	2	Pine Grove	418	P
Kadel, Emma Susan	2	Gettysburg 415	W. Middle St.	
Linn, Hubert Miller	1	Rockwell, N. C.	120	P
Mahaney, George Thomas	1	Sparrows Point, Md.	254	C
McAllister, Walter Ginder	2	Manheim	345	M
Naus, Alford Raymond	1	Berwick	202	P
Redcay, Mark Snoddy	1	Hanover	324	P
Rings, William Refus	1	Amlin, Ohio	116	Carlisle St.
Robinson, Ralph Carleton	1	Gettysburg	46	South St.
Roth, Lorene Marian	2	Gettysburg	Broadway	
Sachs, Harry Willis	1	Harrisburg	360	C
Schoffstall, Emanuel Martz	3	Tower City	245	M
Sebold, Charles Earl	1	Dayton, Ohio	304	P
Simon, Carl Robert	1	Hagerstown, Md.	304	P
Stueber, Frederick	1	Pittsburgh	411	P
Trauger, Wilmer Kohl	2	Ferndale	108	P
Tucker, Edith Medora	2	Bayonne, N. J.	116	Carlisle St.
Wall, Fred Brice	3	Gettysburg 114	Chambersburg St.	
Webner, Harvey Walter	1	Harrisburg	220	P
Wolfe, Charles Robert	2	Bloomsburg	222	P
Zerbe, Calvin Lee	2	Pine Grove	418	P

Candidates for the Degree of Bachelor of Science.

Altland, Noah Laveré	10	York	335	M
Ambrose, Anthony Michael	4	Lebanon	335	M
Beckmeyer, David Edward	4	York	403	P
Bream, Henry Trostle	6	Gettysburg	Broadway	
Brininger, Robert Gilchrist	4	Harrisburg	336	M
Buehler, Guyon Edwards	4	Gettysburg	249	Carlisle St.
Cofrances, Ernest Lewis	6	West Haven, Conn.	115	Broadway
Dahmen, Carl Lloyd	6	Jamestown, N. Y.	259	C
Diehl, William Harold	4	Rockport, Ind.	256	C
Fink, Walter John	4	York	334	M
Geiselman, Ralph Alden	10	Hanover	124	P
Gilliland, James Patterson	6	Gettysburg	239	Carlisle St.
Glenn, James Donald	5	Fairfield 147	Chambersburg St.	
Gundel, Walter Peter	4	Columbia	423	P
Haehnlen, Frederick Philip	4	Harrisburg	337	M
Hartley, Robert Clinton	6	Gettysburg	301	Carlisle St.
Hege, Frank Bushey	6	Williamson 133	N. Washington St.	
Hersh, Henry McClellan	6	New Oxford	333	M
Hill, Walter Henry	5	Hughesville	211	P
Hinman, Elmer Stephen	4	Westville, Conn.	133	M
Howard, Charles Harold	6	Gettysburg	Carlisle St.	
Hughes, Charles Glenwood	6	West Chester	419	P
Jacobs, Robert Llewellyn	4	Spring Grove	221	P
Kressler, Clemuel L.	6	Bloomsburg	224	P
Lady, Harold Roy	10	Gettysburg 216	Chambersburg St.	
MacInnes, James Allan	9	Greensburg	138	M
McDonnell, John Henry	7	Gettysburg 140	W. Middle St.	

McDowell, James Waddell	6	Butler	253 C
McGaughy, John Alexander	9	Gettysburg	R D 4
Matsushita, James Shin	10	Tokio, Japan	210 P
Meckley, Herbert Wertz	6	Hanover	Hanover
Mertz, Harry LeRoy	10	Baltimore, Md.	205 P
Moul, Clayton Edward	4	Menges Mills	204 P
Myers, Calvin Reuben	7	Lewistown	240 M
Myers, Peter Wesley	6	York	258 C
Ott, Minter Morrell	5	Johnstown	302 P
Overmiller, Matthew Stanley	6	East Prospect	160 C
Page, Wayne Reyner	4	Clarion	421 P
Ports, Earl George	10	Hanover	412 P
Quigley, Richard Samuel	4	Harrisburg	253 C
Rice, Ray Edward	4	Seven Stars	259 C
Ross, Frederick Uhler	6	Harrisburg	305 Stratton St.
Sheely, William Clarence	6	Gettysburg	143 Springs Ave.
Shelley, Paul Webster	5	Mechanicsburg	262 C
Shetter, Glenwood Benjamin	6	Gettysburg	262 C
Shue, Norman Elwood	4	Glenville	118 P
Sloat, Charles Allen	4	Orrtanna	Orrtanna
Smith, Richard Manges	5	York	406 P
Smith, Theodore Paul	4	Bloomsburg	222 P
Snader, John Milton	4	Connellsville	126 P
Snyder, Franklin Lloyd	10	Martinsburg	412 P
Sowers, Lowell Martin	4	Clearspring, Md.	228 P
Stoner, Clarence Emmanuel	10	Gettysburg	129 Baltimore St.
Stover, Ralph Hays	6	Gettysburg	114 W. High St.
Struble, George Stanley	7	Connellsville	342 M
Toms, Oscar Ray	6	Boonsboro, Md.	363 C
Uhler, Romaine Thompson	6	Jefferson, Md.	423 P
Walter, Luther Brooke	7	Reading	404 P
Waltz, George Frederick	6	West Chester	419 P
Way, Winston Burdette	9	Bridgeport, Conn.	160 C
Wise, Richard John	4	Hanover	127 P
Wolf, Spurgeon Louis	9	Reisterstown, Md.	206 P
Woods, David Walker, Jr.	9	Gettysburg	R D 4
Worcester, Norman Lewis	6	Butler	345 M
Zinn, Chester Allen	6	York	346 M

Sophomores 96

FRESHMAN CLASS.**Class of 1924.****Candidates for the Degree of Bachelor of Arts.****Group**

Alleman, Benson Suesserott	2	Gettysburg	7 Seminary Ave.
Barbehenn, Mary Elizabeth	3	Gettysburg	218 N. Stratton St.
Bush, Horace Edgar	1	Lemoyne	417 P
Carlson, Harry Ludwig	1	McKeesport	135 N. Washington St.
Congleton, Vernon Jerome	1	Baltimore, Md.	359 C
Doub, Donald Joseph	3	Middletown, Md.	257 C

STUDENTS IN COLLEGE

151

Fink, William Conley	2	Emigsville	334	M
Fosnocht, Henry Allison	3	Joanna	327	P
George, Howard Clair	1	New Kensington	161	N. Wash. St.
Gohn, Herman Franklin	1	Harrisburg	359	C
Grimm, Emma Hermine Louise	2	Gettysburg	228	Carlisle St.
Hansen, Christian Max	1	Media	303	P
Hess, Walter Eugene	1	Martinsburg	412	P
Laird, George Densmore	1	Trenton, N. J.	303	P
Leese, Charles	3	Spring Grove	234	M
Menges, David Alvin	1	Menges Mills	359	C
Miller, Leon Clare	1	York	406	P
Miller, William Harold	1	Grantsville, Md.	107	P
Mogel, Charles Luther	1	Newport	328	P
Morecraft, Edward Isaac	1	Bayonne, N. J.	223	P
Pfeffer, Beatrice Otelia	2	Gettysburg	R F D 3	
Reaser, Catherine Grace	2	Gettysburg	Hanover St.	
Reinartz, Frederick Eppling	1	East Liverpool, O.	223	P
Schwartz, William Maine	1	York New Salem	32	N. Stratton St.
Seibert, Earl William	2	Elizabethtown	117	P
Senft, Cletus Arthur	1	York	406	P
Shearer, Francis Allen	1	York Haven	19	W. High St.
Smith, George Wellington	1	Mifflintown	104	P
Stavely, Lloyd Luther	1	Littlestown	410	P
Waybright, Walter Ernest	1	Gettysburg	135	Water St.
Weaver, Lillian Augusta	2	Gettysburg	Gettysburg, Pa.	
Weikert, Treva Justine	2	Gettysburg	224	Steinwehr Ave.
Yost, Hugh Eugene	1	York	426	P

Candidates for the Degree of Bachelor of Science.

Albright, Curtis Miller	4	Brodbecks	118	P
Bailey, James Russell	6	Rockton	161	Washington St.
Bailey, John William	6	South Fork	305	Stratton St.
Bamberger, Russell Elwood	4	York Haven	353	C
Baum, Carl Albert	6	Lemoyne	307	P
Beers, Franklin Wayne	4	Indiana	354	C
Bender, Horace Lehr	6	Hanover	322	P
Bentley, Rolland Peters	6	Camp Hill	19	W. High St.
Bergwall, Marvin Conrad	6	Jamestown, N. Y.	157	C
Bertolet, Nathan Evans	10	Glen Moore	111	P
Bikle, Horace Waters	5	Pittsburgh	244	M
Borland, James Ira	5	Indiana	158	C
Boucher, Scott Walker	7	Rockwood	427	P
Boyer, Robert William	5	Lykens	403	P
Brockley, Charles Robert	10	Chambersburg	201	Carlisle St.
Burger, Keith	6	Gettysburg	146	M
Campbell, Clarence E. Wood	6	Conshohocken	345	M
Canfield, James Gordon	6	Binghampton, N. Y.		
Carruthers, Fred Alton	6	Mt. Union	70	Stevens St.
Chadwick, Wm. McKinley	4	Lebanon	159	N. Washington St.
Clarke, Grace Dorothy	5	Baltimore, Md.	336	Baltimore St.
Clutz, John Jacob	7	Gettysburg	159	Broadway
Collinge, Gilbert	7	Jersey City, N. J.	208	P
Dean, Donald	4	Lancaster	159	C

Deardorff, Charles Robert	9	Gettysburg	40	E. High St.
Drury, Joseph Donahue	7	New Haven, Conn.	115	Broadway
Emmert, L. de Forest A.	6	Chambersburg	A. T. O. House	
Englehart, Charles Clayton	4	Accident, Md.	415	P
Fahey, Charles Augustus	6	Bellows Falls, Vt.	19	W. High St.
Feldman, Edward Henry	7	York	426	P
Fisher, Luther Irvin	5	Hagerstown, Md.	259	C
Frederick, Robert Irvine	10	Carlisle		
Frey, Lester Ward	7	York	404	P
Gantz, Frank Birdsall	4	Lancaster	Hoffman Hotel	
Gehr, John Shockey	9	Waynesboro	261	C
Gilbert, Calvin Rex	10	Gettysburg	40	Hanover St.
Goehring, Henry Goldsmith	4	West Newton	W. Water St.	
Graybill, Harry LaVerne	4	Mt. Wolf	201	Carlisle St.
Grimm, Henry Jacob	6	Harrisburg	162	C
Grothe, Ernest Fred. Henry	9	York	204	P
Haar, Amy Rosetta ✓	4	New Oxford	24	Water St.
Haar, Eva Cornelia	4	New Oxford	24	Water St.
Heindel, Norman Hadley	4	Gettysburg	218	Carlisle St.
Hickey, Paul Keepert	6	Littlestown	Littlestown, Pa.	
Hull, Frederick Lawrence	7	Westminster, Md.	161 ^r	N. Wash. St.
Hutchison, Hugh Gallaher	6	Kittanning	70	Stevens St.
Lauffer, David Robert	10	Export	401	P
Lee, Elten Russell	10	Everett	111	P
Lehman, Paul Edgar	4	Fayetteville	225	P
Limberger, Charles Henry	6	West Chester	417	P
Livengood, Howard Lester	4	Birdsboro	325	P
Long, Frank Harvey Luther	4	Wormleysburg	260	C
MacKille, Allan Austin	7	New Haven, Conn	345	M
MacMillan, Allen Gardner	9	Dunmore	153	C
Malcolm, Walter Simpson	7	Freeport		
McKenzie, Stewart George	4	Fayetteville	225	P
Mickel, Harry Fries	9	Bridgeton, N. J.	161	N. Wash. St.
Miller, Harry W.	4	Rockwood	38	Water St.
Morris, Robert Means	6	Gettysburg	301	N. Stratton St.
Nolan, George Davis	6	Lewistown ,	38	Water St.
Pensinger, Frank Wesley	4	Greencastle	308	P
Phillips, Leon Altmiller	9	Hazleton	357	C
Randall, Allan Boyd	5	Hanover	251	C
Reese, George Edmund	4	Hanover	127	P
Richter, Lewis Herman	9	West Haven, Conn.	115	Broadway
Ridder, John Edward	4	Gormanian, W. Va.	424	P
Riis, Laurence Johannus J.	5	Poughkeepsie, N. Y.	161	N. Wash.
Rosser, Everett Alfred	6	Dunmore	154	C
Roth, Harold Shearer	5	Gettysburg	Broadway	
Rudy, James Samuel	7	York	234	M
Schantz, Bradford Torrey	4	Schaefferstown	210	P
Shearer, Harold Theodore	10	York Haven	353	C
Sheely, Harry Ross	6	Gettysburg	27	East Stevens St.
Shmukler, Jacob Nathaniel	6	Gettysburg	112	Hanover St.
Shook, Edgar LeRoy	4	Greencastle	308	P
Slaybaugh, Carl Ephraim	7	Biglerville	Biglerville	
Smith, Fred Hughes	10	Pine Grove	117	P
Stauffer, Harry Groff	5	Spring Grove	326	P

STUDENTS IN COLLEGE

153

Strine, Howard Hamilton	5	Gettysburg	R F D 7
Swartz, Wilbur Hartman	6	Gettysburg	32 E. Middle St.
Thrush, George Herbert, Jr.	10	Shippensburg	204 Carlisle St.
Tyler, B. Allen	5	Royersford	
Watt, William Gates	9	Kittanning	70 Stevens St.
Weeks, Newton Spangler	4	Renovo	154 C
Weiser, Donald Koehler	7	Gettysburg	300 N. Stratton St.
Wharton, Bruce Graham	4	Renovo	154 C
Wible, Mark Clyde	7	Gettysburg	R F D 4
Wolff, Robert Miller	4	Hanover	343 M
Wright, Wm. Albert Earl	4	Harrisburg	19 W. High St.
			Freshmen 121

STUDENTS NOT CANDIDATES FOR A DEGREE.

Albert, Porter DeRussey	Dubois	257 C
Bange, Fred Ports	Hanover	321 P
Belknap, Harold Porter	Jamestown, N. Y.	157 C
Bickell, Ernest Matthias	Hyndman	219 P
Buccieri, Sam Frank	Steelton	24 Water St.
Buchanan, Walter Neal	Dubois	245 M
De Vito, Michael Joseph	Hartford, Conn. Hotel	Gettysburg
Flory, George Edward	York	204 Carlisle St.
Foster, William Abram	Mapleton Depot	70 Stevens St.
Francis, Robert Milton	Waynesboro	145 M
Hollinger, Charles Raymond	Gettysburg	R F D 10
Houtz, Harold Adam	Harrisburg	141 M
James, Clair Raymond	Hanover	134 M
Jensen, Jacob Roed	Aalborg, Denmark	20 Academy
Kelly, Allen Wilber	Taneytown, Md.	358 C
Lafferty, John Pentz	Altoona	338 M
Maurer, Robert Henry	Wilkes-Barre	137 M
Mazzara, Antonio Vincenzo	Brooklyn, N. Y. Hotel	Gettysburg
McCardle, Ross Clayton	West Chester	422 P
Merva, Andrew Joseph	Nanticoke	415 P
Millar, Peter Jacob	New Oxford	201 P
Millard, Oscar Benjamin	Mt. Carmel	115 Broadway
Millard, Burton John	Mt. Carmel	146 M
Millard, Joseph Delcamp	Mt. Carmel	242 M
Minnich, Mary Susan	Dallastown	40 Stevens St.
Mordan, George	Bloomsburg	224 P
Myers, Philip Trone	Westminster, Md.	233 M
Phillips, Samuel Ellenberger	Harrisburg	S. A. E. House
Plowman, Walter Schmucker	Hanover	346 M
Porterfield, Hubert Lester	Hagerstown, Md.	237 M
Rankin, Ethel Hoopes	West Chester	105 E. Middle St.
Rankin, Charles Albert	West Chester	105 E. Middle St.
Roberts, Harold L.	Leechburg	
Schildnecht, Page Milburn	Hagerstown, Md.	158 C
Stewart, Donald McLean	Gettysburg	228 Baltimore St.
Toot, Evelyn Mae	Gettysburg	452 Baltimore St.
Weigel, Harry Milton, Jr.	Harrisburg	344 M
Winebrenner, George Clare	Gettysburg	783 Baltimore St.
Wolf, John Henry	Westminster, Md.	424 P
Wolski, Clement Edward	Nanticoke	117 P
		Special 39

STUDENTS IN THE ACADEMY.

SENIOR CLASS.

Baker, Bertha Helen	Abbottstown
Beisecker, Bernard Leroy	Ellwood City
Borleis, John Henry August	Raspeburg, Md.
Borlies, Harry Frederick	Raspeburg, Md.
Boyles, Robert Clay	Piedmont, W. Va.
Bream, Walter Robert	Gettysburg
Brenholtz, Walter Metzger	Williamsport
Cashman, William Wolf	New Oxford
Counsil, Charles Albert	Laquin
Curran, George Jacob	Felton
Diehl, Madeleine Weaver	Gettysburg
Forrest, Anna Louise	Gettysburg
Greer, Charles Asbury	Johnstown
Hafer, George Horace	Abbottstown
Hartman, Grace Mae	Gettysburg
Hemminger, Earl Wentworth	Somerset
Jarboe, Joseph Clark	Hagerstown, Md.
King, Charles Frederick	Baltimore, Md.
Leach, Charles Franklin	Lemoyne
Martin, Rudolph David	Nanticoke
Nipple, Thomas Henry	Clinton, O.
Overmiller, Roy Allen	East Prospect
Pyle, Ralph Frederick	Somerset
Scott, John Robert, Jr.	Mt. Carmel
Weaver, Thomas Erdman	Macungie
Weidner, Frederick Piersol	Reading
	Seniors, 26

UPPER MIDDLE CLASS.

Armstrong, Thomas Theodore	Baltimore, Md.
Baker, Ernest Wilson	Bakersville
Barclay, Kenneth Bradley	Sinnamahoning
Bollinger, Harvey Gable	New Oxford
Doyle, Raymond Edgar	Portage
Filbert, Frederick Quail	Auburn
Foltz, Paul Engle	Deodate
Gilbert, Richard Blocher	Littlestown
Grecht, William	Baltimore, Md.
Greenwood, Norman Bramley	Philadelphia
Hasenfuss, Gustav, Jr.	Philadelphia
Karnak, Charles	Johnstown
King, Owen Hess	Sagamore
Klinger, Charles David	Wexford
Kloss, Richard Gilbert	Newport

Leavitt, William James, Jr.
 McNaul, Robert Wayne
 Morrison, James Robert
 Parry, Wesley Galloway
 Reeps, Charles Arthur
 Simons, Harold
 Sloop, Ralph Conrad
 Smith, Henry Philip
 Snir, Edward Albert
 Studholm, Isaac Mossup
 Swartz, Clarence Leroy
 Thomas, John Franklin
 Taylor, Darrell
 Waybright, Clarence Jacob
 White, Dallas Wayne
 Williams, Glenn Wightman

Emporium
 Juniata
 Auburn
 Scranton
 Philadelphia
 Bridgeport, Conn.
 Bloom, Va.
 Baltimore, Md.
 Pittsburgh
 Wiconisco
 Gettysburg
 Hampton
 Laquin
 Gettysburg
 Orrstown
 Mt. Carmel
 Upper Middlers, 31

LOWER MIDDLE CLASS.

Agnew, Raymond Edward
 Barclay, Charles Frederick
 Black, Stanley Auman
 Caskey, Delbert James
 Coates, David Keys Moore
 Coberth, Morris Edward
 Collins, Ivan Long
 Crider, Frank Nelson
 Fichtner, Albon Russell
 Grimm, Gisela Adele
 Hammers, Donald LeRoy
 Heindel, Eleanore Ireland
 Hereter, Jacob Kermit
 Hoffman, Benjamin Franklin
 Hollinger, Albert, Jr.
 Hollinger, Annie Adeline
 Hunger, William Kingsley
 Miller, John Black
 Monteros, Antonio E. de los
 Osterlund, Ralph Dyer
 Ream, George William
 Robinson, Martha Jane
 Sener, Frederick Linwood
 Senft, John Allen
 Simons, Joseph Leon
 Simons, Edwin
 Sloop, Roy Luther
 Vaughn, Anna Elizabeth
 Wood, Robert Winthrop

Fernwood
 Sinnamahoning
 Reading
 Renova
 Westmont, N. J.
 Baltimore, Md.
 Table Rock
 Hagerstown, Md.
 Conemaugh
 Gettysburg
 Gettysburg
 Gettysburg
 Gettysburg
 Williamsport, Md.
 Gettysburg
 Gettysburg
 Vandergrift
 Gettysburg
 Mazatlan, Mexico.
 Philadelphia
 Johnstown
 Gettysburg
 Smithsburg, Md.
 Littlestown
 Bridgeport, Conn.
 Bridgeport, Conn.
 Bloom, Va.
 Gettysburg
 Washington, D. C.
 Lower Middlers, 29

JUNIOR CLASS.

Armstrong, William McDermitt
Bennett, Charles David
Clutz, Paul Alexander
Concha, Antelmo de la
Fortunato, Stanley
Fortunato, Leonard
Haas, Anton Frederick
Kirschmann, Oliver Rendell
Russo, Esterino
Simons, Sidney Paul
Snively, Isaac Newton
Wood, Paul Douglas

Baltimore, Md.
Philadelphia
Gettysburg
Tulancingo, Mexico
Pittsburgh
Pittsburgh
Baltimore, Md.
Philadelphia
Pittsburgh
Bridgeport, Conn.
Cynwyd
Washington, D. C.
Juniors, 12
Total enrollment, 98

SUMMARY.

Number of Students in College 1920-21.

Graduate Students	29
Seniors	66
Juniors	66
Sophomores	96
Freshmen	122
Not candidates for a degree	40
	<hr/>
	419
Names duplicated	5
	<hr/>
Collegiate Department	414
Academy	98
	<hr/>
	512

COMMENCEMENT 1920.

Salutatory.

Frank Warren Bingaman

Commencement Orator.

Hon. T. Dimmer Beeber, LL.D..... Philadelphia, Pa.

Valedictory.

Raymond Thomas Stamm

GRADUATES.

Bachelor of Arts.

Caroline Maude Baker ✓	Edgar Ralph Neff
Carlyle Parks Belknap	James Hedley Peeling
Frank Warren Bingaman	Dwight Frederick Putman
Jacob St. Clair Bousum	Felix Griffin Robinson
Eugene Etwell Cadman	Harold Becker Rudisill
Boyd Harold Deardorff	Perry Deán Schwartz
William Nevin Elliott	Wayne Timalium Schwartz
Walter Earl Garman	John Dwight Shearer
Glenn Teeter Hafer	Paul Bomberger Shearer
Clinton Frederick Hildebrand	Edith Irene Sheely
Franklin Levi Hoke	Lowell Vogel Simpson
Lloyd Monroe Keller	Raymond Thomas Stamm
Walter Klinefelter	Harry Wich Sternat
Robert Malcolm Laird	Margaret Armstrong Stewart
John Henry Lehn	Mildred Minerva Stoner
Guy Edward Miller	John Hoy Wagner
Lewis Jacob Mummert	Arthur Christian Waldkoenig
Clarence Arthur Neal	William Carson Worley

Kirby Mahlon Yienst
As of the class of 1919
Horace Gilbert Becker

Bachelor of Science.

Harvey Raymond Adams	Albert John Menchey
George Bush Baker	Morell Waldo Miller
Grund Frederick Beckmyer	Percy Edwin Miller
Ralph Avery Browning	Clifford Zendt Moyer
Edward Hastings Buck	Russell Alleyne Noon
Truman Buckey Cash	Walter Edgar Rebuck
John Diehl	Calvin Gilbert Reen
Seibert Durboraw Eberly	Louis Kossuth Scheffer
Austin Habecker Fellenbaum	William Brooks Scheffer
Albert Lawrence Flenner	John Lloyd Sharets
Eugene Merle Gillette	Glenn Francis Sheely
Harold Mahlon Griest	Clayton Miller Sherer
David Mitchell Heffelfinger	Harry Washington Slanker
Norman Gephart Jacobs	Jacob Monroe Spangler
Christian Chas. Kattenhorn	Michael Joseph Stoney
Edgar Henry Lecrone	George McAllister Widder
William Oliver McLane, Jr.	Charles Richard Wolff

Byron W. Yarrison
As of the class of 1919
Arthur William Glunt

ADVANCED DEGREES.

Master of Arts.

Martin Luther Faust.....	Ambler, Pa.
Alexander Oberlander Potter	Kitchener, Canada
B. F. L. Rosenberry	Easton, Pa.
William Thomas Sieber	McAllisterville, Pa.
Ethel Basehoar Wickey	Littlestown, Pa.

Master of Science.

Bruce Levi Christ	Pine Grove, Pa.
Harry Weber Dippel	Jersey City, N. J.
Ida Dorothy Duckstad	Gettysburg, Pa.

Master of Arts in Course.

Dr. W. K. T. Sahm, class of 1872
Dr. J. McC. Dickson, class of 1908

HONORS AND PRIZES.

GENERAL FINAL HONORS.

Frank Warren Bingaman	Dwight Frederick Putman
Clarence Arthur Neal	Edith Irene Sheely
Raymond Thomas Stamm	

HIGHEST CLASS HONORS.

Senior.

Raymond Thomas Stamm

Junior.

Levi David Gresh

Freshman.

Carl Robert Simon

CLASS HONORS.

Senior.

Carlyle Parks Belknap	Calvin Gilbert Reen
Frank Warren Bingaman	Edith Irene Sheely
John Henry Lehn	Clayton Miller Sherer
Clarence Arthur Neal	Harry Washington Slanker

Junior.

John William Albig	Edward Lee Holman
Oscar Wilhelm Carlson	Adelaide Marion Kerchner
Percy Samuel Eichelberger	Foster Ellis Klingaman
Ida Salome Sheads	

Sophomore.

Milton Valentine Burgess	Paul Steck Gilbert
Stella Barton Shumaker	

Freshman.

Dixon Hoover Geiser
Minter Morrell Ott

Richard Manges Smith
Laura Marie Steinour

DEPARTMENTAL FINAL HONORS IN GREEK.

Raymond Thomas Stamm

DEPARTMENTAL FINAL HONORS IN CHEMISTRY.

Harold Mahlon Griest

David Mitchell Hefflefinger

William Brooks Scheffer

DEPARTMENTAL FINAL HONORS IN PHILOSOPHY.

Raymond Thomas Stamm

HASSLER LATIN PRIZE.

Adelaide Marion Kerchner

With honorable mention of

(summa cum laude)

Ida Salome Sheads

GRAEFF PRIZE IN ENGLISH.

Margaret Armstrong Stewart

With honorable mention of

Carlyle Parks Belknap

Henry Wich Sternat

BAUM MATHEMATICAL PRIZE.

Russell Luther Sahn

With honorable mention of

Milton Valentine Burgess

GARVER LATIN PRIZE.

Dixon Hoover Geiser
Emma Susan Kadel

Carl Robert Simon
Laura Marie Steinour

BREWER GREEK PRIZE.

John Hoy Wagner

With honorable mention of

Adelaide Marion Kerchner

Clarence Arthur Neal

GARVER PRIZE IN GREEK.

Carl Robert Simon

With honorable mention of

Laura Marie Steinour

MUHLENBERG FRESHMAN PRIZE.

Carl Robert Simon

PRIZES IN DEBATE.**First Prize.**

Oscar Wilhelm Carlson

Edward Lee Holman

William Potts Livengood

Second Prize.

Milton Valentine Burgess

Robert Lee Flynn

Pierce Main Willard

HONORARY DEGREES.

CONFERRED AT COMMENCEMENT 1920.

Doctor of Divinity.

Rev. Joseph A. Anderson	Boxholm, Iowa
Rev. Joseph B. Baker	Gettysburg, Pa.
Rev. Fuller Bergstresser	Middletown, Pa.
Rev. J. Edward Byers	Baltimore, Md.
Rev. William H. Feldman	York, Pa.
Rev. George A. Greiss	Allentown, Pa.
Rev. S. Winfield Herman	Harrisburg, Pa.

Doctor of Laws.

President John A. Morehead	Salem, Va.
Rev. John A. Singmaster, D.D.....	Gettysburg, Pa.

INDEX.

	Page.		Page.
Absences, Rules Governing.....	106	Buildings and Rooms, Gettysburg Academy	141
Academy, Gettysburg	141	Business Law	75
Accounting, Course in	75	Business Organization	76
Admission :			
Rules Governing	18	Calculus	85
Requirements for	19, 23	Calendar	2, 3
Advanced Standing	21	Chapel Services	106
Admission Subjects in Detail...	23	Church Services	106
Advanced Standing, Admission to	21	Class Advisers	15, 105
Advanced Degrees, 1920	159	Class Honors	113
Advisers, Class	105	Class Memorials	134
List of	15	Cement Testing	91
Advisers, Group	105	Chemistry and Physics Group (IV)	39
Aid for Students	116	Chemistry :	
Algebra	84	Courses of Instruction	81
Alumni Associations	140	Admission Requirements	27
American Government and Politics	76	Chemical Laboratory	127, 132
Anatomy and Physiology	78	Christian Evidences	68
Anglo-Saxon	57	Civil Engineering Group (VII)...	50
Astronomy	86, 88	Civil Engineering Courses	92
Astronomical Observatory	132	College Dormitory Rooms	122
Athletics, General Statement ...	137	College Fees and Tuition	119
Athletic Council, Members.....	16	Commencement, 1920	158
Athletic Field	134	Commerce and Finance	
Attendance, Rules	106, 107	Group (VI)	47
		Committees :	
Bacteriology, Sanitation and	80	Of Board of Trustees	8
Banking, Course in Money and...	74	Of the Faculty	15
Baum Mathematical Prize.....	114	Comparative Government	77
Bequest. Form of	139	Comparative Philology	68
Bible: Courses in English Bible..	68	Conditions and Deficiencies	110
Biblical Literature	68	Constitutional Law	77
New Testament Study	60	Contracts and Specifications	93
Bills, Tuition and Fees	119	Cottage Hall	131
Biology, Chemistry and Physics		Council, Athletic, List of Members.	16
Group (V)	43	Council, Student	105
Biology and Hygiene :		List of Members, 1920-1921...	17
Courses of Instruction	77	Courses of Instruction	56
Admission Requirements	28		
Biological Laboratory	127	Deficiencies. Rules Governing ...	110
Board of Trustees :		In Admission	21
List of Members and Officers....	7	Degree, Master's	112
Standing Committees	8	Degrees Conferred in 1920 :	
Boarding, Clubs	121	Bachelor's	158-159
Boyer Scholarships	117	Honorary	163
Brua Chapel	132	Master's	159
Buildings	130		

	Page.		Page.
Department Honors	113	Finance, Public	74
Descriptive Geometry	90	French :	
Deutscher Verein	59	Courses of Instruction	64
Dormitory Buildings	130	Admission Requirements	26
Rooms, Rent, Charges, etc.....	122	General Information	105
Dupont Scholarship	117	Geography: Admission Require-	
		ments	24
Economics	74	Geology	83
Education. Courses in	72	German :	
Electives, Rules Governing	109	Courses of Instruction.....	57
Elective Subjects for Admission...19		Admission Requirements	26
Electric Lights in Dormitories...125		Gettysburg Academy	141
Electrical Engineering Group (X) 50		Gettysburg, Location of	6
Electrical Engineering		Glatfelter Hall	131
Courses	89, 97	Grades, Method of Designation...111	
Electricity. Courses in	91, 97	Graduates, List, 1920	158
Electrical Machinery	97	Graduation, Requirements for 111, 114	
Electives	109	Graeff Prize	114
Elinore Taylor Brewer Greek		Greek and Latin Group (I).....	30
Prize	115	Greek :	
Embryology	79	Courses of Instruction.....	59
Employees, List of Officers and...12		Admission Requirements	25
Employment for Students	118	Elementary Courses for Stu-	
Engineering Courses :		dents in Groups I and II 59, 60	
General Statement	89	Greek Prize	115
Civil and Sanitary Engineering 92		Group System of Courses	29
Mechanical Engineering	95	Gymnasium :	
Electrical Engineering	97	Courses of Instruction....	81, 109
Engineering Equipment	128	Equipment	132
Engineering Fees	120	Hassler Latin Prize	114
Engineering Library	98	Health and Sanitation	81
English Bible Courses	68	Heat Power Engineering	96
English. Courses of Instruction...56		Highways, Course in	94
Admission Subjects	19, 23	Histology	79
English and American Literature.56		Historical Sketch of the College...4	
English History	69	History and Political Science	
Entrance Requirements :		Group (III)	36
General Statement	19	History :	
Subjects in Detail	23	Courses of Instruction	69
Requirements for Separate		Admission Requirements	27
Groups	30-55	Roman Constitutional History..63	
Equipment of the College	126	History of Philosophy	71
Ethics	71	History of Education	72
Evidences of Christianity	68	Honorary Degrees Conferred, '20 163	
Examinations, Rules	109	Honors, Rules Governing	
Expenses ; Estimated for one year 121		Award of	113
In Gettysburg Academy	143	Honors and Prizes, List, 1920....160	
Faculty: List of Members	9	Honor System	22
Committees	15	Hydraulics	91
Fees, Tuition and Expenses....119		Hygiene, Personal and Public...81	
Gettysburg Academy	143	Inspection Trips for Engineers...98	

	Page.		Page.
International Law	77	Mineralogy	84
Instructors	9	Modern Language Requirements...	26
Italian Course	67	Money and Banking, Course in...	74
Kinematics	95	Muhlenberg Freshman Prize.....	114
Kirschner Scholarships	116	Museum	130
Kuhns History Prize	115	Musical Organizations	137
Laboratories: Equipment	127	New Testament Study in Greek...	60
Fees	120	Officers, Lists:	
Labor Problems	75	Board of Trustees	7
Latin and Modern Language		Faculty	9
Group (II)	33	Student Council	17
Latin:		Alumni Association	140
Courses of Instruction	61	Oratorical Contests	136
Admission Requirements	25	Organic Chemistry	82
Lectures	63	Outline of Groups	30
Law: International	77	Pennsylvania Hall	130
Business Law	75	Philology, Comparative	68
Constitutional Law	77	Philosophy Courses.....	70
Roman Law	63	Physical Culture	81, 109
Lectures:		Physical Laboratory	127
Faculty, and Y. M. C. A.	137	Physics:	
Lectureships	88	Courses of Instruction	86
Library: General Statement	126	Admission Requirements	28
Of Literary Societies	126	Physiology, Anatomy and	78
Of Engineering	98	Political History of Europe	69
Linguistic Science	68	Political Science Courses	76
Literary Societies	136	Power Plant Design	96
Logic	70	Prescribed Subjects for Admission	19
MacFarlane, James, Fund.....	126	Presidents of the College	
Machine Design	95	1832-1921	5
Masonry	94	Press Club	138
Master's Degree:		Prizes: General Statement	114
Requirements	112	List of Awards 1920	160
Material Equipment of College...	126	Property of Students	125
Materials Testing	91	Psychology	70, 73
Mathematical Physics	87	Publications	138
Mathematical Prize	114	Public Finance	74
Mathematics:		Public Speaking	57
Courses of Instruction	84	Railroads, Course	93
Admission Requirements	24	Reading Room	127
McKnight Hall	130	Records, Grades, etc.	111
Mechanical Engineering Group		Re-examinations	110
(IX)	50	Religion, Philosophy of	71
Mechanical Engineering Courses...	95	Report of Student's Record	111
Mechanical Drawing Courses....	90	Requirements for Admission.....	18
Admission' Requirements	27	Requirements for Graduation....	111
Mechanics	90, 95	Roman History	63
Memorials of Classes	134	Roman Law	63
Military Science and Tactics:		Roman Constitutional History....	63
General Statement	99		
Courses of Instruction	100		

INDEX

167

	Page.		Page.
Rooms: Assignment	122	Student Council	105
Rental Rates	123	List of Members, 1920-21	17
R. O. T. C.	99	Students' Interests	136
Samuel Garver Greek Prize.....	115	Student Property	125
Samuel Garver Latin Prize	115	Student Publications	138
Sanitary Engineering, Group		Students Not Candidates for	
(VIII)	50	a Degree	22
Sanitation and Bacteriology	80	Surveying	92
Sanitary Science	81	Teachers: Note on Preparaton	
Sanskrit	68	for Teachng	139
Scholarships and Aid for		Terms and Vacations	106
Students	116	Thaddeus Stevens Hall	131
Semester Hour Defined	29	Treasurer's Bills	119
Seminaries:		Trigonometry	84
Civil Engineering	94	Trustees, Board of	7, 8
Electrical Engineering	97	Tuition and Fees, College	119
Mechanical Engineering	96	Gettysburg Academy	143
Physics	88	Unit Defined	19
Sewerage	94	Vacations	106
Shopwork	95	Water Supply Engineering	94
Sociology	70	Weidensall Y. M. C. A.	133
Spanish Courses	65	Y. M. C. A.	133, 136
Statics and Dynamics	90	Zoölogy, Courses	78
Structural Design and Drafting...	93	Admission Requirements	28
Stuckenbergl Lectureship in			
Sociology	88		
Students:			
List, College 1920-21	145		
List, Gettysburg Academy	154		

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Founded in 1832

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COLLEGE CALENDAR--1921-1922-1923.

1921.

September, 19, 20 ... Monday and Tuesday, Entrance Examinations.
 September 21 Wednesday, 11 A. M., College Year begins.
 September 21 Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 24 Thanksgiving Day. Holiday.
 December 5 Monday, 1 P. M., Mid-Winter Meeting of
 Board of Trustees in Harrisburg.
 December 21 Wednesday, Noon, Christmas Recess begins.

1922.

January 5 Thursday, 7.45 A. M., Christmas Recess ends.
April 7 Founders' Day.
 April 13 Thursday, Noon, Easter Recess begins.
 April 19 Wednesday, 7.45 A. M., Easter Recess ends.
 May 17 Wednesday, Latin Examination for Hassler
 Prize.
 May 29 to June 3 .. Monday to Saturday, Senior Final Examina-
 tions.
 May 30 Decoration Day. Holiday.
 June 5 to 12 Monday to Monday, General Final Examina-
 tions.
 June 11 Sunday, 10.45 A. M., Baccalaureate Sermon.
 June 12 Monday, 8 P. M., Concert by Combined Musi-
 cal Clubs in Brua Chapel.
 June 12, 13 Monday and Tuesday, Entrance Examinations.
 June 13 Tuesday, 9.30 A. M., Annual Meeting of Board
 of Trustees in Gettysburg.
 June 13 Tuesday, 10 A. M., Senior Class Day Exercises.
 June 13 Tuesday, Alumni Class Reunions.
 June 13 Tuesday, 4 P. M., Baseball Game.
 June 14 Wednesday, 10 A. M., Commencement Exer-
 cises.
 June 14 Wednesday, Noon, Alumni Collation.

Summer Vacation.

September 18, 19 ... Monday and Tuesday, Entrance Examinations.
 September 20 Wednesday, 11 A. M., College Year begins.
 September 20 Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 30 Thanksgiving Day. Holiday.
 December 4 Monday, 1 P. M., Mid-Winter Meeting of
 Board of Trustees in Harrisburg.
 December 20 Wednesday, Noon, Christmas Recess begins.

1923.

January 4 Thursday, 7.45 A. M., Christmas Recess ends.
 January 29 to Monday to Saturday, Examinations closing
February 3 First Semester.
 February 3 Saturday, Noon, First Semester ends and
 Second Semester begins.
 February 22 Washington's Birthday, Holiday.
 March 29 Thursday, Noon, Easter Recess begins.
 April 4 Wednesday, 7.45 A. M., Easter Recess ends.
 June 13 Wednesday, Commencement.

HISTORICAL.

The Charter of Gettysburg College was approved April 7, 1832. The opening paragraphs are as follows:

"WHEREAS, the literary and scientific institution in Gettysburg, Adams County, in this Commonwealth, known by the name of Gettysburg Gymnasium, is resorted to by a large number of young men from different portions of this State, and elsewhere, and promises to exert a salutary influence in advancing the cause of liberal education; therefore,

"SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, That the Gettysburg Gymnasium be, and hereby is erected into a College, for the education of youth in the learned languages, the arts, sciences and useful literature.

"SECTION 2. And be it further enacted by the authority aforesaid, That the style and title of said College shall be 'Pennsylvania College of Gettysburg'* and that it shall be under the management, direction and government of all the subscribers to the funds of said institution, by whose private contributions the said funds have been raised and its present edifice purchased, to wit: John B. McPherson, Thomas C. Miller, Thomas J. Cooper, Samuel Fahnestock, Samuel S. Schmucker, Ernest L. Hazelius, David F. Schaeffer, John G. Morris, Benjamin Kurtz, William Heim, Charles P. Krauth, Frederick D. Schaeffer, J. George Schmucker, J. F. Heyer, Jacob Martin, Abraham Reck, William Ernst, Jacob Medtard, Lewis Eichelberger, Michael Meyerheffer, Jonathan Ruthrauff,

*On Nov. 14, 1921, the name was changed to Gettysburg College.

Jacob Crigler, John F. Macfarlane, Robert Goodloe Harper, John Herbst, and their successors, to be elected as hereinafter mentioned."

The College in a large measure grew out of the necessity of properly preparing men for the Theological Seminary, established in 1826 at Gettysburg. This purpose has never lessened, and to-day the institution regards this is an important feature of its work and offers special opportunities to young men preparing themselves for theological studies. Gettysburg College in its beginnings and its history is closely identified with the Lutheran Church.

The College began without endowment, with one small building (now a residence on the south-east corner of Washington and High streets), and a small attendance. But the wholesome enthusiasm of its able instructors, the loyalty and self-sacrifice of its officers, students, and alumni, and the devotion of its friends, have made its history down to the very present one of steady and continuous growth. To-day Gettysburg College is rated as a college of the highest grade by the United States Bureau of Education, by the Department of Education of every State in the United States, and by all other educational authorities and standardizing agencies.

Following is a list of the Presidents of the College from its foundation to the present time:

1832-34, Samuel S. Schmucker, D.D., Founder.

1834-50, Charles Philip Krauth, D.D., First President.

1850-68, Henry L. Baugher, D.D., Second President.

1868-84, Milton Valentine, D.D., LL.D., Third President.

1884-1904, Harvey W. McKnight, D.D., LL.D., Fourth President.

1904-10, Samuel G. Hefelbower, Ph.D., D.D., Fifth President.

1910-, William A. Granville, Ph.D., LL.D., Sixth President.

LOCATION.

Gettysburg is situated in the beautiful rolling area of the red shale belt of Pennsylvania, with its ridges of intrusive rock. A few miles west is the South Mountain ridge of the Blue Mountains. The situation is healthful, and there is a good supply of filtered water. The town is readily reached from all directions by the Philadelphia & Reading and the Western Maryland Railways, which connect at Harrisburg, Pa., and Baltimore, Md., with the great railway systems of Pennsylvania and the South, and by Auto Bus Lines to Harrisburg, York, Hanover, Chambersburg and Littlestown. Washington Baltimore, Harrisburg, York, Hagerstown, Chambersburg, Carlisle, and other important centers are connected with Gettysburg by splendid State Highways making it a very important automobile tourist center. The Coast to Coast Lincoln Way passes through Gettysburg.

The historic association of Gettysburg with the Civil War gives the locality great additional interest. The events of the Battle of Gettysburg are recorded in inscriptions on about fourteen hundred monuments and one thousand markers, many of these being of large size and of great artistic merit. The Battlefield is made accessible by over forty miles of very fine avenues, along which are the markings that show the battle lines. Miles of the rifle pits and other intrenchments have been preserved, as well as scores of lunettes. Here also is the National Cemetery where Lincoln made his memorable dedicatory speech. Such surroundings develop a love of our united country and inspire to better citizenship.

The college buildings were all used as hospitals during and after the Battle of Gettysburg; and the Fiftieth Anniversary of the Battle of Gettysburg Commission had its headquarters on the campus, July 1-4, 1913.

BOARD OF TRUSTEES.

Elected.

1890.	HON. SAMUEL McC. SWOPE*	Gettysburg
1892.	THOMAS C. BILLHEIMER, D.D.*	Gettysburg
1893.	JOHN WAGNER, D.D.*	Hazleton
1896.	JOHN B. McPHERSON, Esq.	Boston, Mass.
1897.	WILLIAM A. SHIPMAN, D.D.*	Johnstown
1898.	HENRY C. PICKING	Gettysburg
1899.	CHARLES F. STIFEL	Pittsburgh
1899.	HENRY H. WEBER, D.D.	York
1902.	CHARLES BAUM, M.D., Ph.D.	Philadelphia
1906.	SAMUEL G. HEFELBOWER, Ph.D., D.D.	Carthage, Ill.
1907.	MARTIN H. BUEHLER	Baltimore, Md.
1907.	HON. R. WILLIAM BREAM	Gettysburg
1907.	LT. COL. FREDERICK H. BLOOMHARDT, M.D., M.C.	Camp Benning, Ga.
1907.	ALPHEUS EDWIN WAGNER, D.D.	Gettysburg
1908.	WILLIAM L. GLATFELTER	Spring Grove
1908.	FRANK E. COLVIN, Esq.	Bedford
1908.	JOHN F. DAPP	Harrisburg
1908.	GEORGE B. KUNKEL, M.D.	Harrisburg
1908.	JACOB A. CLUTZ, D.D., LL.D.	Gettysburg
1910.	WILLIAM A. GRANVILLE, Ph.D., LL.D.	Gettysburg
1910.	CHARLES J. FITE	Pittsburgh
1910.	BURTON F. BLOUGH	Harrisburg
1912.	CHARLES H. BOYER	Chicago, Ill.
1913.	HON. LUTHER A. BREWER	Cedar Rapids, Ia.
1914.	FREDERICK H. KNUBEL, D.D., LL.D.	New York, N. Y.
1914.	PERCEY D. HOOVER, M.D.	Waynesboro
1915.	LESLIE M. KAUFFMAN, M.D.	Kauffman's
1915.	HARVEY C. MILLER	Philadelphia
1916.	JOHN B. McALISTER, M.D.	Harrisburg
1917.	JEREMIAH ZIMMERMAN, D.D., LL.D.	Syracuse, N. Y.
1918.	LOUIS S. WEAVER, M.D.	York
1919.	E. CLARENCE MILLER	Philadelphia
1921.	HARRY C. HOFFMAN, M.D.*	Connellsville
1921.	REV. JOSEPH B. BAKER, D.D.*	Gettysburg

Officers.

JOHN F. DAPP	President
HON. SAMUEL McC. SWOPE	Vice President
HENRY C. PICKING	Secretary and Treasurer

*Designated as Alumni Trustees, having been elected on nomination by the Alumni Association.

STANDING COMMITTEES OF THE BOARD.**Executive Committee.**

	Term Expires
MARTIN H. BUEHLER, Chairman	1925
THOMAS C. BILLHEIMER, D.D.....	1924
HENRY C. PICKING.....	1923
JACOB A. CLUTZ, D.D., LL.D.....	1922
WILLIAM L. GLATFELTER.....	1921
JOHN F. DAPP	Ex-officio
WILLIAM A. GRANVILLE, Ph.D., LL.D.....	Ex-officio

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GEORGE B. KUNKEL, M.D., Chairman
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 LT. COL. FREDERICK H. BLOOMHARDT, M.D.

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WILLIAM ANTHONY GRANVILLE, Ph.D., LL.D.
President

3 Campus

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Professor Emeritus of English Literature and Political Science
130 Carlisle St.

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Dean and Pearson Professor of Latin
145 Lincoln Ave.

EDWARD SWOYER BREIDENBAUGH, Sc.D.
Ockershausen Professor of Chemistry and Mineralogy
227 Carlisle St.

GEORGE DIEHL STAHLEY, A.M., M.D.
Professor Emeritus of Biology and Hygiene
300 Carlisle St.

REV. CHARLES HENRY HUBER, Litt.D.
Headmaster and Professor of Latin in Gettysburg Academy
411 Carlisle St.

KARL JOSEF GRIMM, Ph.D.
Professor of German
228 Carlisle St.

REV. CHARLES FINLEY SANDERS, D.D.
William Bittinger Professor of Philosophy
135 Broadway

LOUIS ALEXANDER PARSONS, Ph.D.
Professor of Physics
225 Lincoln Ave.

REV. MILTON H. VALENTINE, D.D.

Amanda Rupert Strong Professor of English Bible and Professor
of History

143 Springs Ave.

SIVERT NIELSEN HAGEN, Ph.D.

Graeff Professor of English

29 Stevens St.

ALBERT BILLHEIMER, Ph.D.

Franklin Professor of Greek

251 Springs Ave.

FRANK H. CLUTZ, Ph.D.

Burton F. Blough Professor of Civil Engineering

159 Broadway

RUDOLPH ROSENSTENGEL, M.M.E.

Professor of Electrical and Mechanical Engineering

59 York St.

EUGENE MONELL BAXTER, Ph.D., LL.D.

Professor of Romance Languages

20 E. Middle St.

C. LEE SHILLIDAY, M.S.

Dr. Charles H. Graff Professor of Biology

Kendlehart Apts.

ARNOLD V. JOHNSTON, A.M.

Professor of Economics and Political Science

Eberhart Apts.

RICHARD A. ARMS, Ph.D.

Alumni Professor of Mathematics

143 Springs Ave.

FRANK H. KRAMER, Ph.D.

Professor of Education

133 N. Washington St

THE FACULTY

11

MAJOR C. NIXON, Infantry, U. S. Army
Professor of Military Science and Tactics and Commander
Reserve Officers' Training Corps (R. O. T. C.)
W. Lincoln St.

CLYDE BELL STOVER, A.M.
Assistant Professor of Chemistry
24 E. Lincoln St.

CAPTAIN GEORGE N. RANDOLPH, Infantry, D.O.L., U. S. A.
Assistant Professor of Military Science and Tactics (R. O. T. C.)
Eagle Hotel

JAMES ALLEN DICKSON, A.M.
Instructor in Chemistry
263 Springs Ave.

GEORGE REICH MILLER, M.S.
Instructor in Physics
3 West St.

HORACE GILBERT BECKER, A.M.
Instructor in Economics
209 N. Washington St.

CALVIN GILBERT REEN, B.S.
Instructor in Engineering
144 Springs Ave

JOHN ROY LOVELL, A.B.
Instructor in French
238 Baltimore St.

WILLIAM WALLACE WOOD, B.S.
Instructor in Mathematics
Arendtsville

GUY S. KLETT, Ph.B.
Instructor in English
Water St.

FIRST SERGEANT J. W. OLIVER, Inf., D.E.M.L., U. S. Army
Instructor in Military Science and Tactics (R. O. T. C.)
Eagle Hotel

GETTYSBURG COLLEGE

RAYMOND THOMAS STAMM, A.B.
 Assistant in English Bible and History
 Room 51, Seminary.
 JOHN WILLIAM ALBIG, JR., A.B.
 Assistant in English and German
 Water St.

FOSTER ELLIS KLINGAMAN, B.S.
 Assistant in Physics
 30 N. Washington St.

JOHN ALLEN SHEFFER, B.S.
 Laboratory Assistant in Chemistry
 234 Chambersburg St.

GEORGE ISRAEL MYERS, A.B.
 Assistant in Mathematics
 30 N. Washington St.

HENRY WOLF BIKLE, A.M., LL.B.
 Lecturer on Constitutional Law
 Philadelphia

PROF. HARRY ELMER BARNES, Ph.D.
 Stuckenberg Lecturer on Sociology
 Worcester, Mass.

DOYLE REVERE LEATHERS, B.S.
 Senior Master and Instructor in Mathematics in Gettysburg
 Academy
 Room 314 Main

CLARENCE ARTHUR NEAL, A.B.
 Master in Greek in Gettysburg Academy
 Room 26 Stevens Hall

GEORGE ROSCOE DULEBOHN, A.B.
 Master in English and History in Gettysburg Academy
 Room 306 Main

JOSEPH AUSTIN LEREW, A.B.
 Master in French and History in Gettysburg Academy
 Room 33 Stevens Hall

ADDITIONAL OFFICERS

13

EARL EMERSON ZIEGLER, B.S.

Master in Mathematics and Physics in Gettysburg Academy
Room 204 Main

CALVIN LEE ZERBE

Master in French in Gettysburg Academy
Room 317 Main

JOHN BRENNEMAN

Room 161 C

JENNINGS MASON GENTZLER

Room 203 P

EDWIN LARUE PEGG

Room 405 P

CHARLES FRANKLIN RYDER

Room 402 P

Student Laboratory Assistants in Chemistry

EARL GEORGE PORTS

Room 412 P

CHARLOTTE KATHRYN FASOLD

113 Broadway

Student Laboratory Assistants in Physics

RUSSELL L. SAHM

Student Assistant in Surveying

Room 425 P

ADDITIONAL OFFICERS AND EMPLOYEES.

EDWARD SWOYER BREIDENBAUGH, Sc.D.

Curator of Museum

227 Carlisle St.

GEORGE DIEHL STAHLEY, A.M., M.D.

Medical Director

300 Carlisle St.

KARL JOSEF GRIMM, Ph.D.

Librarian

228 Carlisle St.

REV. MILTON H. VALENTINE, D.D.

Chaplain

143 Springs Ave.

HENRY C. PICKING, A.M.

Treasurer

Office, 16 Center Square

GETTYSBURG COLLEGE

CLYDE B. STOVER, A.M.
Registrar and Secretary of the Faculty
24 E. Lincoln St.

DOYLE REVERE LEATHERS, B.S.
Athletic Director
Room 314 Main

MISS SALLIE P. KRAUTH
Assistant Librarian
3 Baltimore St.

MISS MARY HAY HIMES, A.M.
Assistant Librarian
130 Carlisle St.

MISS RACHEL GRANVILLE
Secretary to the President
3 Campus

HERBERT MILLER LINN
Chief Proctor, Pennsylvania Hall
Room 211 P.

WILLIAM HERMAN SAAS
Proctor in McKnight Hall
Room 240 McK.

GEORGE HERBERT THRUSH, JR.
Assistant Proctor in Pennsylvania Hall
Room 307 P.

CHARLES LUTHER MOGEL
Proctor in Cottage Hall
Room 260 C.

MERLE BOWERS HAFFER
Custodian of Reading Room
Room 220 P.

EDWARD RICHARD REITER
Assistant to Registrar
Room 157 C.

JOHN B. HAMILTON
Superintendent of Buildings and Grounds
128 Washington St.

COMMITTEES OF FACULTY

15

HOMER R. BUOHL
Engineer

132 Water St.

EDWARD BARBEHENN
Watchman

218 N. Stratton St.

S. FRANKLIN WETZEL
Engineer in Gettysburg Academy

48 Stevens St

MRS. CONRAD SMITH
Stewardess in Gettysburg Academy
Carlisle St. and Broadway

MRS. CATHERYN COLLINS
Matron in Gettysburg Academy
Carlisle St. and Broadway

JOSEPH CARVER
Janitor

4 Campus

MERVE CARVER
Janitor

4 Campus

MRS. LAURA HEINTZLEMAN
Janitress

64 W. Middle St.

JACOB ROED JENSEN
Assistant Engineer

Room 20 Main

COMMITTEES OF FACULTY.

Admission to Freshman Class.

GRIMM, BIKLE, CLUTZ, ARMS, STOVER

Admission to Advanced Standing.

ARMS

Library.

GRIMM, GRANVILLE

Curriculum.

PARSONS, CLUTZ, STOVER

Bulletin.HAGEN, PARSONS, ARMS, BAXTER
GRANVILLE, Ex-officio**Hour Schedule.**

BREIDENBAUGH, GRIMM, CLUTZ, KRAMER, NIXON

Students' Publications.

SANDERS, HAGEN, VALENTINE

Supervision of Finance of Student Organizations.

KRAMER, SANDERS, JOHNSTON

College Discipline.

PARSONS, BIKLE, STAHLEY, VALENTINE

Lectures.

GRANVILLE, BIKLE, ROSENSTENGEL, JOHNSTON

Advanced Degrees.

GRIMM, BIKLE, STAHLEY

Representative on Athletic Council.

VALENTINE

Supervision of Social Functions.

BILLHEIMER, KRAMER

Student Organizations.

BREIDENBAUGH, BAXTER, KRAMER

Dormitory Rooms.

PARSONS, STOVER, PICKING, NEAL

Supervision of Musical Clubs.

CLUTZ

Electric Service.

ROSENSTENGEL

ATHLETIC COUNCIL.

MILTON H. VALENTINE

Faculty Representative, President

DOYLE REVERE LEATHERS, '13

Athletic Director, Vice-President

CLARENCE A. NEAL, '20

Secretary

ARTHUR E. RICE, '04

Alumni Representative, Treasurer

GEORGE W. NICELY, '01

Alumni Representative

LEON PAUL KEISER, '22

Student Representative

RUEIL KEEDY GREITZNER RICE, '22

Ex-officio, President of the College Athletic Association

JOHN F. DAPP, ex'89

Ex-officio, President of the Board of Trustees

WILLIAM A. GRANVILLE

Ex-officio, President of the College

STUDENT COUNCIL 1921-22.

CARL L. RUDER, '22

President

JAMES W. KYLE, '22

Vice-President

MILTON V. BURGESS, '22

Corresponding Secretary

GETTYSBURG COLLEGE

WALTER H. HILL, '23

Recording Secretary

F. E. REINARTZ, '24

Treasurer

ALBERT W. HANDSCHUMACHER, '25

Messenger

RALPH MAHAFFIE, '22

CARL L. SIMON, '23

CHARLES L. MOGEL, '23

HARRY L. CARLSON, '24

ADMISSION.

APPLICATION FOR ADMISSION.

Any one desiring to enter the College should make written application for admission on an official certificate form to be obtained from the Registrar. In the application he should present evidence of a good moral character and of the fulfillment of the entrance requirements, and state the degree for which he is a candidate. A student coming from another institution must present a certificate of good standing and honorable dismissal.

An applicant may, however, in his application for admission, state that he is not a candidate for a degree, in which case, if admitted, he will be enrolled in the list of "Students not Candidates for a Degree" and be permitted to take such work as he is prepared to pursue to advantage. Students of the Theological Seminary are admitted to one or more courses in the College.

All changes of enrollment with reference to degrees require that the candidate must make application for, and satisfy the requirements of, the degree for which he becomes a candidate.

METHODS OF ADMISSION.

A student is admitted either by *examinations* held on the Monday and Tuesday preceding the opening of College in September, or by presenting a *certificate* from an approved secondary or high school or from an approved private instructor. The certificate must state the amount of work done and the time spent on each subject, together with the grades received; and the official forms of

certificates (on which the application for admission is made), which may be obtained from the Registrar, *should be used in all cases* to insure the presentation of the necessary information for the Entrance Committee. These certificates should be filled out and returned to the Registrar before the beginning of the college year.

REGISTRATION, ETC.

Every student must call at the Registrar's office at the beginning of the college year and secure instructions in regard to registration and enrollment in classes, and must attend to the details according to the instructions given.

A new student must sign the matriculation pledge and pay the registration fee of \$5.00. Every one, whether a new student or one previously in attendance, must register at the beginning of each year. Beginning with the Monday following the opening of the College, delay in registration is penalized by the imposition of a fee of one dollar for each day of delay up to a maximum of five dollars. Any student entering late will be held responsible for making up all work from the beginning of the semester. No student will be admitted to College later than two weeks after the beginning of the semester except by special permission of the Faculty.

REQUIREMENTS FOR ADMISSION.

Only those are admitted who are graduates of a standard high school or who present evidence of having equivalent preparation.

The scholarship requirement for admission to the Freshman class is the satisfactory completion of 15 units

of work, of which 3 units must be in English and 2 units in Mathematics. A unit of work in any subject is the amount of work done in a standard secondary school in a year of 32 weeks with 5 recitation periods per week of 45 minutes each. No student will be admitted as a candidate for any degree who does not fully satisfy these requirements except that a condition of one unit in Mathematics may be allowed. This because of the fact that in some states students who have had only one year of Mathematics are allowed to graduate from a four-year high school. To make up the total of 10 units in addition to the 5 units of prescribed English and Mathematics, the applicant for admission may offer any subjects given in an approved secondary or high school as listed below.

Although English and Mathematics are the only subjects specifically prescribed for admission to the College, a student may pursue only those subjects in the college curriculum for which he has had adequate preparation. The additional entrance requirements are given on pages 29, 36, and 77. In case these prerequisite studies are not offered for entrance they must be taken either in Gettysburg Academy or in some other approved way before the college studies for which they are prerequisite may be taken, and credit for such prerequisite studies will not count in the total semester hours required for graduation.

RATING OF SUBJECTS FOR ADMISSION.

English.

Grammar, composition, and literature, recommended by the National Conference on Uniform Entrance Requirements**3* units.**

*As the first English work in the high school or preparatory school course is largely grammar, the credit granted in English is one unit less than the number of years of work in this subject.

Mathematics.

- A. Algebra—to quadratics1 unit.
- B. Algebra—quadratics and beyond $\frac{1}{2}$ unit.
- C. Algebra—advanced $\frac{1}{2}$ or 1 unit.
- D. Plane Geometry1 unit.
- E. Solid Geometry $\frac{1}{2}$ unit
- F. Plane Trigonometry $\frac{1}{2}$ unit
- G. Commercial Arithmetic $\frac{1}{2}$ or 1 unit
- H. Composite Mathematics1 unit.

Mechanical Drawing.

- One year $\frac{1}{2}$ or 1 unit.

Greek.

- A. Grammar and four books of Xenophon2 units.
- B. Composition, three books of Homer, and sight translation1 unit.

Latin.

- A. Grammar and four books of Caesar2 units.
- B. Composition and six books of Cicero1 unit.
- C. Six books of Vergil1 unit.

German.

- One to three years1 to 3 units.

French.

- One to three years1 to 3 units.

Spanish.

- One to three years 1 to 3 units.

History.

- United States $\frac{1}{2}$ or 1 unit.
- England $\frac{1}{2}$ or 1 unit.
- Ancient $\frac{1}{2}$ or 1 unit.
- Medieval $\frac{1}{2}$ or 1 unit.
- Modern European $\frac{1}{2}$ or 1 unit.

Economics $\frac{1}{2}$ or 1 unit.**Sociology** $\frac{1}{2}$ or 1 unit**Civics** $\frac{1}{2}$ or 1 unit.**Problems of Democracy** $\frac{1}{2}$ or 1 unit.**Geography, Political and Physical** $\frac{1}{2}$ or 1 unit.**Geography, Commercial** $\frac{1}{2}$ or 1 unit.

Chemistry.

One year with laboratory work	1 unit
One year without laboratory work	$\frac{1}{2}$ unit.

Physics.

One year with laboratory work	1 unit.
One year without laboratory work	$\frac{1}{2}$ unit.

Biology (Botany, Zoölogy).

One year with laboratory work	1 unit.
One year without laboratory work	$\frac{1}{2}$ unit.

General Science.

One year with laboratory work	1 unit.
One year without laboratory work	$\frac{1}{2}$ unit.

ADDITIONAL SUBJECTS.

In view of the new high school curriculum adopted by the Department of Public Instruction for the State of Pennsylvania credit may be given also in the following subjects: Bookkeeping, Stenography, Office Practice, Commercial Law, Business Organization, Salesmanship, Shop work, Agriculture.

ADMISSION TO ADVANCED STANDING.

A student coming from another institution must satisfy the entrance requirements and in addition must present a letter of honorable dismissal and a statement of his complete academic record, each signed by the proper official. The heads of the departments concerned will then pass upon his claims for advanced credit, either with or without examination.

No one is admitted to College after the beginning of the Senior year except by special action of the Faculty.

CURRICULUM.

DEGREES.

Courses of study are offered consisting of four years of college work leading to the following degrees:—

- (1) Bachelor of Arts.
- (2) Bachelor of Science.
- (3) Bachelor of Science in Business Administration.
- (4) Bachelor of Science in Industrial Engineering.
- (5) Bachelor of Science in Civil Engineering.
- (6) Bachelor of Science in Mechanical Engineering.
- (7) Bachelor of Science in Electrical Engineering.

ADVISERS.

When a student is admitted to the College some member of the Faculty is designated by the Registrar as his adviser and shall continue as his adviser until the student chooses his major subject, at which time the professor in charge of the major subject becomes his adviser and continues as such thruout his course. The adviser is the medium of communication between the student and the Faculty. The student is required to consult his adviser in regard to his course of study and to secure each year his adviser's approval of his study list, and he should feel free to consult him also on other matters.

COURSES AND CREDITS.

The courses of instruction are given in detail on pages 42-92. The amount of credit given for each course is specified in terms of semester hours. A *semester hour* of college work consists of one hour per week of lectures or classwork or 2 or 3 hours of laboratory work (or lab-

oratory work combined with classwork), drawing, shop-work or field work, per week for one semester.

A record is kept of all credits earned by each student for work done, which record includes the semester hours and the grades. The grades of scholarship are designated as follows: A (excellent); B (good); C (fair); D (poor, barely passed); E (failed, but entitled to a re-examination); and F (failed utterly and must repeat with the next class). In addition to these grades a student's record may show a subject marked "inc.", meaning "incomplete."

Each student who graduates will, on request in person, be furnished with a certified copy of his college record. Requests for such certificates, when furnished in duplicate or thru correspondence, should be accompanied by a remittance of one dollar. Students who leave college before graduation and who are in good standing are entitled to certificates on the same terms.

REPORT.

A report from the above record is sent to the parents or guardian of each student at the end of each semester. About the middle of each semester notice is given to the student and to his parents or guardian if his work is of low grade or if he has an excessive number of absences.

SCHEDULE AND ENROLLMENT.

Most of the studies in the Freshman and Sophomore years are prescribed, but in the Junior and Senior years there is for candidates for A.B. and B.S. a rather wide choice of subjects under the major and minor system. The list of subjects selected by the student for the ensuing year (including the major subject, the minor, and the electives), approved by the adviser, must be filed by the student in the Registrar's office (on the proper form furnished by the Registrar) on or before April 1 of each

year except the Senior. This study list must be obtained from the Registrar at the time of Registration the following September and must then be indorsed by the adviser and the Registrar. The student will then be enrolled by the respective instructors in the classes designated in his approved study list. No student will receive credit in any classes in which he is not so enrolled.

No candidate for a degree is allowed to take less than 14 semester hours except by special action of the Faculty. In the case of a student assistant doing actual teaching, such teaching may be counted as part of the 14 hours.

A Freshman is limited in his enrollment to the number of semester hours listed in the Freshman schedule. No student whose record during the preceding year shows a majority of grades below B will be allowed to take during the Sophomore year more semester hours of work than the number listed in the Sophomore schedule; or during the Junior and Senior years more than 18 semester hours per semester in the case of candidates for A.B. and B.S., or more than the semester hours scheduled for the Engineering or Business Administration students in the Junior and Senior years.

If a student's record during the preceding year shows a majority of grades (reckoned by semester hours) A or B and none below C, he may be allowed to enroll for a greater number of semester hours, as follows:

(a) In the Sophomore year, 20 semester hours per semester, or 2 semester hours per semester more than the number given in the Sophomore schedule for the given degree, if the number scheduled is greater than 18 semester hours per semester.

(b) In the Junior and Senior years, 20 semester hours per semester.

Only honor students are allowed to take more than the number of semester hours above specified (and that

number must include all "make up" and prerequisite work). Honor students will be allowed to take 22 semester hours in the Junior year and 23 in the Senior year. An honor student is one whose record during the preceding year shows a majority of grades A and nothing below B. A student who has been an honor student during three complete years will be allowed to graduate with 132 semester hours, provided all of the studies prescribed for the degree have been completed.

An extra tuition fee of \$5.00 is charged any student for each semester hour of college work in excess of 18 semester hours per semester or in excess of the semester hours required by the schedule if that be in excess of 18.

CLASS RATING AND SCHOLARSHIP DEFICIENCIES.

A student will not be advanced in class enrollment (or rating) at the beginning of any year if he is deficient in as much as one third of the previous year's work (reckoned by semester hours) ; and if on Oct. 20 he is still deficient in one third of a year's work his rating will not be advanced during that academic year. Work to remove a deficiency must be included in the student's class enrollment in the year following the one in which the deficiency occurred.

MAJORS AND MINORS.

Each candidate for the Degree of Bachelor of Arts or Bachelor of Science should choose as early as possible and not later than March 1 of the Sophomore year one major subject, on which he intends to concentrate, and one minor subject related to the major. As soon as the choice of major has been certified by the Registrar, the professor in charge of the major subject becomes the student's adviser and continues as such until the end of the Senior year. The adviser must approve a list of studies for the student for the following year, including

the major and minor and electives, which list must be given to the Registrar not later than April 1.

A major consists of not less than 18 semester hours in a single subject or department, of which at least 12 semester hours must be taken in advanced subjects. A major may not contain more than 36 semester hours in a single subject, including the work done in that subject in the Freshman and Sophomore years. A minor subject consists of 12 or more semester hours, of which at least 6 must be advanced work. The following subjects may be chosen as majors:

English	Education
Greek	Economics
Latin	Political Science
German	Mathematics
French	Biology
Philosophy	Chemistry
History	Physics

REQUIREMENTS FOR THE BACHELOR'S DEGREE.¹

The degrees of Bachelor of Arts and Bachelor of Science will be conferred upon students who are enrolled as candidates for the respective degrees, and who fulfill the following requirements:

(1) Satisfactorily complete 136 semester hours of work, except that honor students may be graduated upon the completion of 132 semester hours

(2) Receive a grade of C or better in at least 80 semester hours of college work.

(3) Complete satisfactorily the prescribed work as indicated below, including all preparatory or pre-requisite work, and the major, minor and electives approved by the adviser.

No student will be graduated who is not present at the Commencement, unless he be excused by the Faculty.

¹ For the requirements for degrees in Business Administration and Engineering see pages 36 and 38.

PRESCRIBED WORK FOR THE DEGREE OF BACHELOR OF ARTS.

College Work.	Prerequisite Entrance Work.
1. <i>English</i> , 10 sem. hrs.	<i>English</i> , 3 units
2. <i>Foreign Language</i> , 24 sem. hrs., including:	
a. <i>Latin</i> , 12 sem. hrs.	<i>Latin</i> , 4 units
b. <i>2nd For. Lang.</i> , 12 sem. hrs.	<i>2nd. For. Lang.</i> , 2 units
or <i>2nd For. Lang.</i> , 18 sem. hrs.	No prerequisite
3. <i>History</i> , 4 sem. hrs.	
4. <i>English Bible</i> , 2 sem. hrs.	
5. <i>Philosophy</i> , 6 sem. hrs.	
6. <i>Economics</i> or <i>Political Science</i> , 6 sem. hrs.	
7. <i>Mathematics</i> , 6 sem. hrs.	<i>Math.</i> , 2 units including 1 unit of Algebra
8. <i>Biology</i> , <i>Chemistry</i> , or <i>Physics</i> , 6 or 8 sem. hrs.	

PRESCRIBED WORK FOR THE DEGREE OF BACHELOR OF SCIENCE.

College Work.	Prerequisite Entrance Work.
1. <i>English</i> , 10 sem. hrs.	<i>English</i> , 3 units
2. <i>Foreign Language</i> , 18 sem. hrs., including a and either b or c:	
a. <i>Mod. Lang.</i> , 12 sem. hrs.	<i>Mod. Lang.</i> , 2 units
or <i>Mod. Lang.</i> , 18 sem hrs.	No prerequisite
b. <i>2nd Mod. Lang.</i> , 6 sem. hrs.	<i>2nd Mod. Lang.</i> , 2 units
or <i>Mod. Lang.</i> , 12 sem. hrs.	No prerequisite
or c. <i>Latin</i> or <i>Greek</i> , 6 sem. hrs.	<i>Latin</i> , 4 units

3. *History*, 4 sem. hrs.
4. *English Bible*, 2 sem. hrs.
5. *Philosophy*, 6 sem. hrs.
6. *Economics or Political Science*, 6 sem. hrs.
7. *Mathematics*, 6 sem. hrs. *Math.*, 2 units. including
1 unit of Algebra.
8. a. For students majoring in Biology, Chemistry, or Physics, three one-year courses in two of the following subjects, outside of the major: *Mathematics, Biology, Chemistry, Physics*.*
8. b. For students majoring in Mathematics and other subjects, two one-year courses in two of the following subjects, outside of the major: *Biology, Chemistry, Physics*.

SCHEDULE OF PRESCRIBED STUDIES FOR A.B. STUDENTS.

Freshman Year.

	Sem.	Hrs.	Notes
English	6		
Latin	6		
Foreign Language	6		
Mathematics	6	.....2	
Biology	8	one.....	
Chemistry ...			
Physics			
History and Bible	6		
Military Science ...	2	one.....	3
Physical Training ..			
<hr/>			
40			

Sophomore Year.

	Sem.	Hrs.	Notes
English	4		
Latin	6		
Foreign Language	6	.....4	
Philosophy	4		
Military Science	2	one	.....3
Physical Training			
Electives	12		
<hr/>			
34			

*Thus, if the major is Biology, the student may take two years in Mathematics and one year in Chemistry or Physics; or, two years in Chemistry or Physics and one year in Mathematics; or, two years in Chemistry and one year in Physics, etc.

SCHEDULE OF PRESCRIBED STUDIES FOR B.S. STUDENTS.

Freshman Year.

	Sem.	Hrs.	Notes
English		6	
Foreign Language	12		1
Mathematics	6		2
Biology	one	8	5
Chemistry ...			
Physics	one	6-8	6
History and Bible ..			
Biology	one	2	3
Military Science ...			
Physical Training...			
			40-42

Sophomore Year.

(For Major in Biology, Chemistry or Physics.)

	Sem.	Hrs.	Notes
English		4	
Foreign Language		6	4
Philosophy		4	
Mathematics ..	three	6-8	8
Biology			
Chemistry ...			
Physics	one	2	3
Military Science ...			
Physical Training ..			
			36-38

Sophomore Year.

(For Major in other Subjects.)

	Sem.	Hrs.	Notes
English		4	
Foreign Language		6	4
Philosophy		4	7
Political Science ...	one	6	
Economics			
Biology	one	8	8
Chemistry			
Physics	one	2	3
Military Science ...			
Physical Training ..			
Major subject or Elective			
			36

Junior and Senior Years for A.B. and B.S. Students.

Major subject, Minor subject, and all electives approved by the Adviser, including all the requirements for the given degree not already fulfilled in the Freshman and Sophomore years, subject also to the limitations of the hours of enrollment.

NOTES ON THE SCHEDULES.

1. A student who enters without any foreign language will not be permitted to begin more than one Foreign Language in the Freshman year.

2. A student deficient in the prerequisite to Freshman Mathematics must take this prerequisite work in the Freshman year, postponing the regular Freshman Mathematics until the prerequisite is completed.

3. All male students, except those excused by the Medical Officer, are required to take either Military Science or Physical Training in the Freshman and Sophomore years. Those electing Military Science are required to continue it for two years (this is one of the requirements for graduation). Those excused from both Military Science and Physical Training will take an elective in the place of these 2 semester hours.

4. The Modern Language begun in the Freshman year must be continued thru the Sophomore year.

5. Students intending to take a major in Mathematics or Physics will naturally take Physics in the Freshman year. Pre-medical students and those intending to take a major in Biology or Chemistry will take Chemistry; other students may elect any one of the three sciences.

6. Pre-medical students and those intending to take a major in Biology will take Biology; all others are required to take History and Bible in the Freshman year. Biology students will take History and Bible in the Junior year.

7. Biology and Pre-medical students will take Biology in the Sophomore year and may postpone the Philosophy until the Junior year.

8. See rule on page 30, prescribed work for B.S. degree, No. 8. Choice should be made in the Sophomore year between Biology Chemistry, Physics and Mathematics so as to conform to this rule.

COURSES UNDER THE MAJOR AND MINOR SYSTEM.

A variety of courses of study may be arranged under the different majors in the list on page 28, by the choice of minors and electives so as to meet a wide range of requirements of different students. Suggestions for a few such courses are given below.

CLASSICAL COURSE.

Those desiring to pursue a course similar to the old Classical Course will follow the Freshman and Sophomore schedules on page 30 for A.B. and then select a major in Greek or Latin (and a minor in Latin or Greek). Ministerial students, i. e., those who enter the college with the intention of preparing for the Christian ministry, are urged to take this course.

COURSES IN PREPARATION FOR TECHNICAL POSITIONS.

Besides the courses in Industrial, Civil, Mechanical, and Electrical Engineering, intended to fit men for technical and industrial positions in those lines, courses may be arranged with Chemistry as a major, which will well prepare men to fill the many positions in industrial or applied chemistry; or courses with Physics as a major, which will prepare for similar positions in applied physics.

PRE-MEDICAL COURSE.

The following course, with a major in Biology, is advised for those students who desire to prepare for entrance to a medical school: Two years of Biology, two years of Chemistry and one year of Physics are included in the first two years of this course. If a student can offer for entrance an elementary course of Chemistry satisfactory to the Department of Chemistry, it may be possible for the student to take the second year of Chemistry in the Freshman year and Organic Chemistry in the Sophomore year and thus in two years satisfy the requirements of those medical colleges which require but two years of college work for entrance, including two years each of Biology and Chemistry (including Organic Chemistry), and one year of Physics. Certificates of work completed will be given students desiring them at the end of the second year.

Freshman Year.

	Sem.	Hrs.
English	6	
Foreign Language (including Latin)	12	
Mathematics	6	
Biology	8	
Chemistry ...	8	
Military Science ... {one.....	2	
Physical Training .|		
	—	
	42	

Sophomore Year.

	Sem. Hrs.
English	4
Foreign Language	6
Philosophy	4
Biology	8
Chemistry	6
Physics	8
Military Science ..	} one..... 2
Physical Training ..	
	<hr/>
	38

Junior Year.

	Sem. Hrs.
Chemistry	9
Physics	8
History and Bible	6
Biology	8
	<hr/>
	31

Senior Year.

	Sem. Hrs.
Economics or Political Science	6
Philosophy	2
Hygiene	2
Electives	18
	<hr/>
	28

COURSES FOR PROSPECTIVE TEACHERS.

A student preparing to teach should choose as his major the subject he prefers to teach and expects to teach. He should choose as his minor the subject that would be his second choice in case there is no opening in the field of his major subject at the time he goes out to teach. His electives should include subjects for general cultural training and as much work in Education as is possible. He should see that he at least satisfies the school code requirements of the State in which he expects to teach.

A student intending to prepare for executive positions in the educational world (superintendencies, principalships, etc.), should choose Education as his major subject. He will receive either the A.B. or B.S. degree, depending upon the choice of the rest of his work. He should also see that he meets the requirements of the State in which he expects to do his work. In order to be certificated for teaching a subject in Pennsylvania, at least 12 semester hours in that subject are required. The student should see to it that he meets that regulation, in at least two of the subjects he prefers to teach.

The following courses are suggested:

Freshman Year.

	Sem.	Hrs.
	A.B.	B.S.
English	6	6
Latin	6	
Foreign Language*†	6	12
Mathematics	6	6
Chemistry	8	8
U. S. History and Bible	6	6
Military Science ..	2	2
Physical Training ..		
	—	—
	40	40

Sophomore Year.

	Sem.	Hrs.
	A.B.	B.S.
English	4	4
Latin	6	
Foreign Language*†	6	6
General Psychology	2	2
Introduction to Philosophy	2	2
Physics	8	8
Political Science ..	one.....	6
Economics		
Military Science ..	one.....	2
Physical Training ..		
Electives‡	4	6
	—	—
	34	36

Junior Year.

	Sem.	Hrs.
	A.B.	B.S.
Biology	8	8
Introduction to Teaching	3	3
History of Education, General	3	3
History of Education, U. S.	3	3
Secondary Education	3	3
Educational Psychology	3	3
Philosophy of Education	3	3
Electives§	6	4
	—	—
	32	30

*One Foreign Language begun in the Freshman year must be continued thru the Sophomore year.

†Those students who intend, after graduation from college, to work for the degree of Ph.D. at a university should take at least 2 years of German and 2 years of French in college.

‡If the student has not had Accounting Practice, it is suggested that this be taken as an elective.

§Public Speaking, Logic, Ethics, Military Science, are suggested as electives.

Senior Year.

	Sem. Hrs.	
	A.B.	B.S.
Methods of Teaching	3	3
School Administration	3	3
Practice Teaching	6	6
Electives*	18	18
	<hr/>	<hr/>
	30	30

PRESCRIBED TECHNICAL COURSES.**BUSINESS ADMINISTRATION COURSE.**

Entrance requirements: English, 3 units; Mathematics, 2 units; and sufficient electives to make a total of 15 units.

This course is intended primarily for students who wish to prepare for a business career, and emphasis is laid upon the general principles underlying all lines of business. It is also designed for those who intend to enter law or the public service, and generally to form the basis, and provide the outlook, for a life of activity and leadership in community affairs.

The course leads to the degree of Bachelor of Science in Business Administration. Required for graduation: 138 semester hours, 80 of which must be passed with a grade of C or better.

Freshman Year.

		Sem. Hrs.
English		6
Foreign Language†		6
History and Bible		6
Advanced Algebra		3
Commercial Algebra		3
Chemistry	} one.....	8
Physics		
Biology		
Accounting Practice		4
Military Science ...	} one.....	2
Physical Training		
		<hr/>
		38

*Personal and Public Hygiene, Sociology, Experimental Psychology, Military Science are suggested as electives.

†Prerequisite for the foreign language work in this Course: 2 units in each of two foreign languages.

Sophomore Year.

	Sem. Hrs.
English	4
Foreign Language	6
Psychology	2
Introduction to Philosophy	2
Insurance	3
Statistics	3
American Government and Politics	6
Principles of Economics	6
Military Science ..	{ one.....
Physical Training ..	
	—
	34

Junior Year.

	Sem. Hrs.
Foreign Language	6
United States History	6
Sociology	2
Ethics	2
Municipal Government*	3
European Governments*	3
Money and Banking	3
Business Law	3
Resources and Industries	3
Labor Problems	3
	—
	34

Senior Year.

	Sem. Hrs.
Constitutional Law†	3
International Law†	3
Corporation Finance	3
Accounting Principles	3
Business Management	3
Railway Transportation	3
Electives‡	14
	—
	32

*Or Constitutional Law and International Law, given alternate years.

†Or Municipal Government and European Governments, given alternate years.

‡Students in Business Administration are allowed to elect Military Science in the Junior and Senior years regardless of any limitations of hours of enrollment.

ENGINEERING COURSES.

For entrance requirements see page 77.

Freshman Year.

	Sem.	Hrs.
English	6	6
Foreign Language	6	6
Mathematics	8	8
History and Bible	6	6
Chemistry	8	8
Engineering:		
Mechanical Drawing	2	2
Surveying	5	5
General Engineering	1	1
Military Science ...	}one	2
Physical Training		
	—	44

Sophomore Year.

	Sem.	Hrs.
English	4	4
Mathematics*	6	6
Physics	8	8
Economics	6	6
Engineering:		
Descriptive Geometry	2	2
Mechanical Drawing	2	2
Mechanics	6	6
Military Science ...	}one	2
Physical Training		
	—	36

Junior Year.

	Sem.	Hrs.
Philosophy	4	4
Physics†	8	8
History and Bible	6	6
Military Science (Elective)†	4	4
Engineering:		
Elements of Electrical Engineering	5	5
Thermodynamics	3	3

And in addition, for the different courses in Engineering:

*All Engineering students take Calculus thruout the Sophomore year, except those in Industrial Engineering who take one semester of Calculus and one of Investment Mathematics.

†Engineering students are allowed to elect Military Science in the Junior and Senior years regardless of any limitations of hours of enrollment.

‡Not required in 1922-1923.

CIVIL ENGINEERING:

	Sem.	Hrs.
Mineralogy	4	
Engineering:		
Materials	5	
Structural Design A, B.....	6	
Hydraulics	3	
	<hr/>	
	37	

INDUSTRIAL ENGINEERING:

	Sem.	Hrs.
Economics:		
Business Law	6	
Money and Banking		
Labor Problems	6	
Resources and Industries.		
Engineering:		
Heat Power	3	
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	37	

MECHANICAL-ELECTRICAL ENGINEERING:

	Sem.	Hrs.
Engineering:		
Kinematics	3	
Shop Work	4	
Materials	5	
Heat Power	3	
Hydraulics	3	
Machine Design	2	
	<hr/>	
	41	

Senior Year.

CIVIL ENGINEERING.

	Sem.	Hrs.
Geology	2	
Astronomy and Geodesy	3	
Railroads	3	
Structural Design, C, D	4	
Structural Drafting	2	
Highways	3	
Sewerage	3	
Business Law	3	
Engineering Specifications	3	
Seminary	2	
Elective	4	
	<hr/>	
	32	

Sem. Hrs.

MECHANICAL ENGINEERING.

Engineering Specifications	3
Machine Design	6
Heat Power	6
Power Plant Design	3
Structural Design, A, B	4
Mechanical Laboratory	1
Business Law	3
Seminary	1
Elective	5
	<hr/>
	32

INDUSTRIAL ENGINEERING.

Sem. Hrs.

		Sem. H
Economics:		
Corporation Finance	}	6
Accounting Principles		
Business Management		
Railway Transportation ..		
Structural Design, A, B		4
Industrial Economics		6
Engineering Specifications		3
Heat Power		3
Power Plant Design		3
Seminary		2
		33

ELECTRICAL ENGINEERING.

Sem. Hrs.

Engineering Specifications	3
Telephone	2
Heat Power	3
Electrical Machinery	7
Electrical Characteristics	3
Mechanical Laboratory	1
Business Law	3
Seminary	1
Power Plant Design	3
Elective	3
Electrical Laboratory	3
	<hr/>
	32

In order to obtain the degree of Bachelor of Science in any of the Engineering courses, the student must have completed satisfactorily the total work and semester hours as scheduled above, and make a grade of C or better in 80 or more semester hours.

THE MASTER'S DEGREE.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS.

In applying for admission as a candidate for the degree of Master of Arts, the applicant must present (a) evidence of a good moral character, and (b) a certificate showing that he has obtained the degree of Bachelor of Arts in a standard college or university. No student shall be allowed to do work leading toward the Master's degree until his undergraduate work has been completed and he has been recommended by the Faculty for the Bachelor's degree. He must further designate the subject or subjects he wishes to pursue, in harmony with the major and minor system. Upon the approval of his credentials and choice of studies by the Committee on Advanced Degrees, and the payment of the registration fee (\$25.00), the applicant may be admitted by the Faculty as a candidate for the degree. The degree of Master of Arts will be conferred upon the candidate after the satisfactory completion of twenty-four semester hours of advanced work in his studies, as certified by the Registrar, including the writing of an approved essay in his major subject. The essay becomes the property of the College. The professor in charge of the major subject is the candidate's adviser until the degree is obtained.

REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE.

The degree of Master of Science will be conferred upon the same conditions as the degree of Master of Arts, except that the candidate must have received the degree of Bachelor of Science.

COURSES OF INSTRUCTION.

ENGLISH.

Professor Hagen, Mr. Klett, and Mr. Albig.

A Major in English includes Courses 1, 2 (A, B), 3, and either 4 or 6.

A. English Composition.—This course consists of practice in writing exposition, argument, description, and narration, in long and short themes, and in letters; with the parallel study of specimens, and of the principles of rhetoric as they apply to writing. Lectures, recitations, written exercises in the class-room and outside, and personal conferences.

Required course for all Freshmen. Three periods thruout the year. Credit of six semester hours.

Prerequisite: 3 units of entrance English.

1. English and American Literature.—This course consists of a survey of English Literature from "Beowulf" to Kipling, and of the chief American writers; lectures, collateral reading, and written reports.

Required course for all Sophomores. Two periods thruout the year. Credit of four semester hours.

2 A. Shakespeare.—Careful study of half a dozen of the plays, with the more rapid reading of others, selected and arranged so as to give the student an insight into the development of Shakespeare's mind and art.

Junior course. Three periods, first semester Credit of three semester hours.

2 B. Victorian Poetry.—A study of the poets of the Victorian period, with special attention to Tennyson and Browning.

Junior course. Three periods, second semester. Credit of three semester hours.

3. English Novel and Short Story.—A survey of the growth of the novel in structure and content, and a study of the history, principles, and structure of the short story. Lectures, collateral reading of representative novels and short stories, class discussions, reports, and personal conferences.

Senior course. Two periods thruout the year. Credit of four semester hours.

4. Anglo Saxon.—An introductory course including the study of the elementary principles of the grammar and the reading of representative selections from Anglo-Saxon literature.

Junior and Senior course. Two periods thruout the year. Credit of four semester hours.

5. Public Speaking and Oral Reading.—This course consists of practice in prepared and extempore speaking, in oral reading of prose and poetry, and in general platform work.

Elective course open to all qualified students. Two periods thruout the year. Credit of four semester hours.

6. Argumentation and Debating.—A study of the substance and the forms of argumentative discourse, written and spoken; involving the principles of inductive and deductive logic, of sound and fallacious reasoning, of evidence, of the selection and use of materials, and of the best forensic and platform practice.

Elective course open to members of class and college debating teams; and to qualified Juniors and Seniors. Two periods thruout the year. Credit of four semester hours.

GERMAN.

Professor Grimm and Mr. Albig.

A Major in German includes Courses 1, 2, 3, 5, and 6.

A. Elements.—Grammar, Practical Exercises. Translation of simple Prose and Poetry. Memorizing of Primer.

Three periods thruout the year. Credit of six semester hours.

1. **Modern Prose.**—Practical Exercises. Private Reading.
Three periods thruout the year. Credit of six semester hours.
Prerequisite: 2 units of entrance German or Course A.
 2. **Lyric and Epic Poetry.**—Private Reading.
Three periods thruout the year. Credit of six semester hours.
 3. **Drama.**—Private Reading.
Three periods thruout the year. Credit of six semester hours.
 4. **Luther.**
One period thruout the year. Credit of two semester hours.
 5. **Advanced Composition.**
One period thruout the year. Credit of two semester hours.
 6. **Principles of Linguistic Science.**—Special reference is made to the development of the German language. Methods of teaching German.
One period thruout the year. Credit of two semester hours.
 7. **Elementary Course in Scientific German.**
Two periods thruout the year. Credit of four semester hours.
 8. **Advanced Scientific German.**
One period thruout the year. Credit of two semester hours.
- Deutscher Verein.**—Opportunity for more extended German conversation and study may be offered to advanced students in a voluntary German club.

GREEK.

Professor Billheimer.

A Major in Greek includes Courses 1, 2, 3, and 3 hours chosen from Courses 4-7.

- A. **First Year Greek.**—An elementary course for beginners.
Three periods thruout the year. Credit of six semester hours.

B. Second Year Greek.—A course for those who have taken First Year Greek. Selections from prose authors.
Three periods thruout the year. Credit of six semester hours.

1. Cebes.—The "Tablet" will be reproduced by the students in drawing.

Freshman course. Three periods, first semester. Credit of three semester hours.

2. Lysias.—Selected speeches.

Freshman course. Three periods, second semester. Credit of three semester hours.

3. Plato.—"Apology," and "Crito." Individual reports will be made on the life and work of Socrates.

Sophomore course. Three periods, first semester. Credit of three semester hours.

4. Greek History.—A survey of the history of Greece from the earliest times to the death of Alexander the Great. The study of the history of this period will be accompanied by an examination of the early archaeological remains and by the reading of selections from the literary and epigraphical sources. Reports on special subjects will be made by members of the class.

Sophomore course. Three periods, second semester. Credit of three semester hours.

5. Demosthenes.—The "First Philippic" and the "Olynthiacs." Oxford text. The students prepare grammatical and historical notes for each oration.

Junior and Senior course. Three periods, first semester. Credit of three semester hours.

6. New Testament.—The Gospel of John, and selections from other books.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

7. Euripides.—This course will give a practical introduction to Greek metrics, and will include the history of Greek Tragedy and of the Greek Theatre.

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

LATIN.

Professor Bicklé.

A Major in Latin includes Courses 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 (or 11), 12 (or 13).

Allen and Greenough's "Latin Grammar" and Harper's "Latin Lexicon" are recommended. Of the smaller dictionaries the student is advised to get the "Elementary Latin Dictionary," by Charlton T. Lewis.

1. **Livy.**—Selections from Book I, and the Hannibalian War in Books XXI and XXII. Special attention is given the syntax and Livy's peculiarities of style. Collateral reading on the Punic Wars, and lectures on Rome and Carthage.

Freshman course. Three periods during the first semester up to the Christmas vacation. Credit of two semester hours.

Prerequisite: 4 units of entrance Latin.

2. **Horace.**—Selections from the "Odes," including a critical interpretation with special attention to the Horatian meters and the mythological and historical allusions of the text. Berens' "Hand-Book of Mythology" is recommended. Collateral reading on Horace as a lyric poet.

Freshman course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

3. **Cicero.**—The "De Senectute" will be read, with thoro drill in syntax, special attention being given to the mode uses of the Latin Subjunctive.

Freshman course. Three periods from the last of March to the close of the academic year. Credit of two semester hours.

Note. During part of the Freshman year there will be, in connection with the reading of the Latin text, drill in Latin Prose Composition, embracing a rapid review of Latin syntax, with oral and written practice in the principles involved.

4. **Cicero.**—The “De Amicitia” or the “De Natura Deorum.” Rigid drill in syntax will be continued, with training in reading the Latin text with expression. Collateral reading of the life and times of Cicero. Informal lectures on Cicero’s philosophical views.

Sophomore course. Three periods a week during the first semester up to the Christmas vacation. Credit of two semester hours.

5. **Horace.**—“Satires,” and the “De Arte Poetica.” After the study of some selected satires the “Ars Poetica” is read, and each student is required to prepare a written analysis of the poem. There is a review of the dactylic hexameter versification.

Sophomore course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

6. **Tacitus.**—The “Agricola,” or selections from the “Annals.” Along with the translation of the text there will be a study of the times in relation to the literature of this period, and special attention will be given to the characteristics of the Silver Age Latinity.

Sophomore course. Three periods from the last of March to the close of the year. Credit of two semester hours.

7. **Quintilian.**—Tenth Book of the “Institutes.” The student is required to make a close study of the terms used by Quintilian in literary criticism, and to make a summary and classification of the Greek and Roman authors.

Junior course. Two periods during the first semester to the Christmas vacation. With course 8, credit of four semester hours.

8. **Juvenal.**—Selected Satires. With full explanations of the text and collateral reading on the private and social life of the Romans of the Empire. Followed by a short course in Roman Antiquities.

Junior course. Two periods from the beginning of January to the close of the college year. With course 7, credit of four semester hours.

9. **Terence or Plautus.**—The “Andria” of Terence or the “Captivi” of Plautus. The dramatis personae are assigned to special members of the class and the parts are rendered both in

Latin and English. Informal lectures on the Roman theatre; also on the origin and development of the Latin drama, and the value of the Roman comedy to the philologist and the student of Roman life.

Senior course. Two periods for ten weeks. With courses 10 or 11, and 12 or 13, credit of four semester hours.

10. Latin Literature.—A course of lectures embracing a general survey of the whole field, and aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, with special attention to the writers of the Golden and Silver Ages. Or, —

11. Roman History.—A course of lectures covering the period from 150 B. C. to 100 A. D.

Senior course. Two periods for eight weeks. With courses 9 and 12, credit of four semester hours.

12. Roman Law.—Morey's "Outlines" is the chief text-book. After a careful study of the historical development and content of Roman Law, a paper is required from each member of the class on a subject assigned for special investigation. Or, —

13. Roman Constitutional History.—The subject is pursued with the aid of a text-book.

Senior course. Two periods for seventeen weeks. With courses 9 and 10, or 11, credit of four semester hours.

ROMANCE LANGUAGES.

Professor Baxter, Mr. Lovell, and Assistants.

A Major includes not less than twenty-four nor more than thirty-six semester hours.

Courses comprising at least twelve semester hours (two years) are required of every student who enrolls as a beginner in any Romance Language.

Two Romance Languages are not to be commenced in any semester.

The elementary courses in the Romance languages provide a thoro drill in the fundamentals of grammar, composition, pro-

nunciation, conversation and translation, as well as a beginning in the study of the literature of the languages.

The intermediate courses complete the essentials of grammar and rhetoric and offer somewhat critical studies of various classes of modern literature.

The literary courses deal with the history of the literature and the development of the languages and offer critical studies of important periods and masterpieces.

The courses in composition require the preparation of essays, short stories, "magazine articles," and similar work.

The oral courses give opportunity for oral reading, conversation, and the oral discussion of assigned topics.

The commercial and scientific courses make provision for the special needs of students planning to engage in commercial or scientific pursuits.

Students to be specially recommended to teach French or Spanish should complete with high grades the subjoined minimum of courses and in addition read at least twelve hundred pages of supplementary texts. Minimum: (a) Elementary, (b) Intermediate, (c) Literary A and B, (d) Advanced Literary A or B, (e) Composition, (f) Oral, (g) Methods.

The supplementary reading courses make it possible for ambitious students to do much more reading than can be assigned to a class collectively, and therefore make much more progress than the average student. The reading each semester depends entirely on the individual student; it may vary from a few pages in the case of one to several hundred pages in the case of another.

FRENCH.

French A.—Elementary Course. For beginners.

Three periods thruout the year. Credit of six semester hours.

French 1.—Intermediate Course. Prerequisite, French A.

Three periods thruout the year. Credit of six semester hours.

French 2.—Literary Course, A. Alternates with course B.

French 2.—Literary Course, B. Alternates with course A. Prerequisite for each literary course, French 1. Course A deals with the earlier literature of the language, B with the later. A is offered in the odd-numbered years, B in the even-numbered.

Three periods thruout the year. Credit of six semester hours.

French 3.—Advanced Literary Course A. Alternates with Course B. Advanced Literary Course B. Alternates with Course A. Prerequisite for each, French 2, A or B. A studies the development of the French novel, B, the French drama. A is offered in the even-numbered years, B in the odd-numbered.

Two periods thruout the year. Credit of four semester hours, each.

French 4.—Composition Course. May alternate with French 5. *Three periods thruout the year. Credit of six semester hours.*

French 5.—Oral Course. May alternate with French 4. *Three periods thruout the year. Credit of six semester hours.*

French 6.—Commercial Course. Alternates with French 7.

French 7.—Scientific Course Alternates with French 6. A prerequisite for each course is French 1. French 6 is offered in the odd-numbered years and French 7 in the even-numbered.

Each course three periods thruout the year. Credit of six semester hours.

French 8.—Supplementary Reading Course. Reports are required instead of recitations.

One to four periods thruout the year. Credit of two to eight semester hours.

French 9.—Methods Course. For prospective teachers.

One hour thruout the year. Credit of two semester hours.

SPANISH.

Spanish 1.—Elementary Course. For beginners.

Three periods thruout the year. Credit of six semester hours.

Spanish 2.—Intermediate Course. Prerequisite, Spanish 1.

Three periods thruout the year. Credit of six semester hours.

Spanish 3.—Literary Course, A. Alternates with B.

Spanish 3.—Literary Course B. Alternates with A. Prerequisite for each literary course, Spanish 2. Course A deals with the earlier literature of the language, and is offered in the odd-numbered years; B deals with the later literature of the language and is offered in the even-numbered years.

Each course, three periods thruout the year. Credit of six semester hours.

Spanish 4.—Advanced Literary Course A. Alternates with Course B. Advanced Literary Course B alternates with Course A. Prerequisite for each, Spanish 3, A or B. A deals with the development of the Spanish drama; B, with the Spanish novel.

Three periods thruout the year. Credit of six semester hours.

Spanish 5.—Composition. Course may alternate with Spanish 6.

Three periods thruout the year. Credit of six semester hours.

Spanish 6.—Oral Course. May alternate with Spanish 5. Prerequisite for Spanish 6 is Spanish 2.

Three periods thruout the year. Credit of six semester hours.

Spanish 7.—Commercial Course. Alternates with Spanish 8.

Spanish 8.—Scientific Course. Alternates with Spanish 7. Prerequisite for each course, Spanish 2. Spanish 7 is offered in the odd-numbered years, and Spanish 8 in the even-numbered.

Each course, two or three periods thruout the year. Credit of four or six semester hours.

Spanish 9.—Supplementary Reading Course. Reports are required instead of recitations.

One to four periods thruout the year. Credit of two to eight semester hours.

Spanish 10.—Methods Course. For prospective teachers.

One hour thruout the year. Credit of two semester hours.

ENGLISH BIBLE.

Professor Valentine and Mr. Stamm.

1. **General Introduction to the English Bible.**—The progress of revelation in the Scriptures is followed in its historical developments from the origins of the Hebrew people to the close of the Apostolic Age.

Freshman course. Two periods, second semester. Credit of two semester hours.

2. **Literary Study of the Bible.**—The distinctive types of literary structure in the Bible as presented by Moulton in his "Modern Reader's Bible" are studied. The underlying principle is that an understanding of the outer literary form is a guide to an appreciation of the inner spirit.

Sophomore course. One period thruout the year. Credit of two semester hours.

3. **New Testament Study.**—See Greek 6.

CHRISTIAN EVIDENCES.

Professor Valentine.

1. A study of the evidences of the presence and action in the world of a supernatural redemptive power operating thru the Gospel, as these appear in the first Christian documents, and in Christian history, with the special aim of dealing with the perplexing questions which arise in the effort to intellectualize the content of the Christian revelation.

Junior course. Two periods, first semester. Credit of two semester hours.

HISTORY.

Professor Valentine and Mr. Stamm.

A Major in History includes Courses 1, 2, 3 and 4.

1. **Political History of Modern Europe.**—With the political and industrial revolutions of the eighteenth century as back-

ground the progress of subsequent European development is studied, with the special view of enabling the student to understand contemporary events and movements by thus connecting them with their proximate origins.

Freshman course. Three periods in first semester, one period in second semester. Credit of four semester hours.

2. English History.—A study of the English people from the earliest times to the present.

Sophomore course. Two periods each semester. Credit of four semester hours.

3. United States History.—Comprises a study of our national history, with the view of discerning the political, social, and economic forces that have been operative in the development of the republic

Junior course. Three periods each semester. Credit of six semester hours.

4. The Renaissance and the Reformation.—A study of the forces and conditions involved in the transition from the mediaeval to the modern world.

Senior course. Two periods each semester. Credit of four semester hours.

PHILOSOPHY.

Professors Sanders and Kramer.

A Major in Philosophy includes Courses 1, 2, 3, 5, 6, 8, and an additional six semester hours chosen from the remaining courses in the Department of Philosophy. Education 2 may likewise be included in the Major in Philosophy.

1. Psychology.—A course in general psychology which aims to acquaint the student with the phenomena of mind, the methods of psychological investigation, and the practical bearing of the various mental functions on the problems of ethics, pedagogy, etc.

Sophomore course. Two periods, first semester. Credit of two semester hours.

- 2. Introduction to Philosophy.**—The course in general psychology suggests the problems of philosophy. The course in Introduction aims to acquaint the student with the content of philosophy, the origin and development of the various problems, the aim and method of philosophy, the results which have been attained, and its relation to the other departments of human thought.

Sophomore course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

- 3. Logic.**—An introductory course in the laws of thought. The evolution of the concept, its development into judgment and inference, the systematic function of classification, the explanatory function of generalization, and the methodology of proof and investigation are studied with a view to securing a foundation for the theory of knowledge and effective scientific method.

Junior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

- 4. Sociology.**—A study of the nature of society and its problems. Starting with the psychological factors of sociation, the development of social institutions, the economic and cultural factors of social progress, and the elimination of hindrances, evils are taken up in turn with a view to an understanding of the methods of social improvement.

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

- 5. Ethics.**—A study of human conduct. The concept of personality and the idea of self-realization, as forming the background of moral judgment, are wrought into a system which explains the origin of the moral motives as well as their implication of God and immortality.

Junior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

- 6. History of Philosophy.**

A. Ancient and Medieval Period.—This course traces the rise and progress of reflective thought as it appears among the Greeks and culminates in Scholasticism. Special stress is placed upon the Greek thinkers, with a view to acquiring an understanding of the spirit of philosophy.

Senior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3.

B. Modern Period.—This course covers the period from the Renaissance to the present time. Special stress is placed upon the great systems. The student is required to read selections from the great thinkers and report on them, the constant aim being to cultivate the philosophizing attitude, thus furnishing a basis for independent thought as well as an inspiration to do original thinking.

Senior course. Three periods, second semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, 3, and 6 A.

7. Philosophy of Religion.—A study of religion as a distinct factor in human development. The aim of the course is to show the nature of religion and to interpret the various forms in which it manifests itself.

Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

8 Metaphysics.—Beginning with the method of system building, the student is introduced to the meaning of a world-view, the factors which a comprehensive and consistent view must recognize, and the reasons for regarding Theism as the theory which best meets existing requirements.

Senior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, 3, 5, and 6.

9. Epistemology.—A study of epistemology investigating the principles of science with a view to understanding their origin, their validity, and their philosophical implications.

Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

10. Experimental Psychology.—This is an elementary laboratory course in psychology, covering the most essential features in the experimental method.

Senior and Junior course. Five laboratory periods, second semester. Credit of two and one-half semester hours.

Prerequisite, Philosophy 1.

11. Adolescent Psychology.—A study of the psychology of adolescence with chief stress on the high school age.

Junior and Senior course. Two periods first semester. Credit of two semester hours. Given 1921-22 and alternate years.

Prerequisite, Philosophy 1.

12. Applied Psychology.—A course dealing with the applications of psychology in the fields of business, industry, education, medicine, law, etc.

Junior and Senior course. Two periods, first semester. Credit of two semester hours. Given 1922-23 and alternate years.

Prerequisite, Philosophy 1.

EDUCATION.

Professors Kramer and Sanders.

A Major in Education includes Courses 1A, 2, 3, 5, 6, 9, 10, 11.

1A. History of Education (General).—A study of the most important movements in the history of education and of the factors and personages instrumental in bringing about various steps in the long line of progress.

Junior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2.

1B. History of Education (United States).—The development of Education in the United States furnishes the subject matter of this course. The interrelation between educational ideals and methods and the needs imposed by the development of colonial and national life and the more recent industrial development is followed very closely. The aim constantly kept in the foreground in these courses is to

get a clear grasp of the ways in which the schools shape the destiny of civilization.

Junior course. Three periods, second semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2.

- 2. Philosophy of Education.**—This course is an elaboration of the answer to the age old question "What is it to educate?" It is a systematic treatment of the aim of education, what determines the aim, the content-material and the principles governing the realization of this aim.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2, and Education 1.

- 3. School Organization and Administration.**—A study of the practical problems of school organization and administration.
- Senior course. Three periods, second semester. Credit of three semester hours..*

Prerequisite, Philosophy 1, 2, and Education 1.

- 4. Secondary Education.**— A study of the principles and problems of the secondary school. The course is intended for those who are looking forward to High School and Superintendency positions.

Junior and Senior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2.

- 5. Educational Psychology.**—This course deals with the psychology of learning, methods of mental measurement, memory and intelligence tests, treatment of precocity and deficiency, &c.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2.

- 6. Methods.**—This course deals with methods of teaching in the High School.

Senior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1, 2, and Education 1.

- 7. Sunday School Pedagogy.**—This course deals with the organization, equipment, administration of the Sunday School; curricula, courses of study, text books, psychology of the pupils, methods of teaching in the various departments, etc. Considerable supplementary reading and observation work are required.

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Philosophy 1.

- 8. Seminar in Experimental Research.**—The course deals with developing a valid procedure for the experimental determination of controverted questions in methods of teaching. Each student is expected to choose a real problem of the school room, develop procedure, and actually test it out in the class room.

Graduate course for teachers. Two periods, first semester. Credit of two semester hours. Given 1921-22 and alternate years.

- 9. Comparative Education.**—A comparative study of the school systems of the United States, France, Great Britain, Germany, and Denmark.

Junior and Senior course. Two periods, first semester. Credit of two semester hours. Given 1922-23 and alternate years.

Prerequisite, Philosophy 1 and 2.

- 10. Introduction to High School Teaching.**—This is an introductory course to the field of teaching, covering such fundamental topics, as aim, purpose, methods, discipline, organization, etc., of the American public schools.

Junior course. Three periods, first semester. Credit of three semester hours.

- 11. Practice Teaching.**—This course will require observation and practice teaching for one hour a day for the five school days, with one hour a week of conference in connection therewith. The observation and practice teaching will be done in the appropriate field.

Senior course. Six periods, first semester. Credit of six semester hours.

- 12. Educational Sociology.**—This course aims to acquaint the stu-

dent with the social function of education together with the needs out of which the educational program arises.

Junior and Senior course alternating with Course 2, second semester. Credit of three semester hours. Given 1922-23.

Note.—The new Pennsylvania School Code requires of all teachers who desire the provisional State certificate, Courses 10, 11, 5, and two of the following: 1A, 1B, 2, 3, 4, 6, 8, 9, 12.

The permanent State certificate is issued upon three years of successful teaching experience in the appropriate field and the satisfactory completion of six semester hours of additional work of at least collegiate grade, one half of which should be professional and the remainder related to the subjects or subject fields in which the candidate is certified to teach, together with a teaching rating of "middle" or better.

Various departments will offer courses in methods. Consult head of the Department of Education.

ECONOMICS.

Professor Johnston and Mr. Becker.

A Major in Economics includes Course 1 and 12 semester hours chosen from Courses 2, 5, 7, 8, 9, 11, 12.

A. Accounting Practice.—This course deals with the technique of accounting in produce and provision business, general merchandise and manufacturing business. Attention is given to cost analysis and other fundamental features of the subject. Double entry system.

Sophomore course. One lecture and three hours of laboratory work per week thruout the year. Credit of four semester hours.

1. Principles of Economics.—A study of the conditions of national prosperity as wealth, competition, law, morals, and geographical situation. An analysis of the productive forces and industries of society. Exchange from angles of value, money, banking, marketing, and foreign commercial policy. Under distribution are examined prin-

ciples determining rate of wages, interest, rent, and profit. Rational consumption. Luxury. Taxation. Current social policies aiming at economic reform.

Sophomore course for all students, who may, however, take political Science 1 (American Government and Politics) instead. Three periods thruout the year. Credit of six semester hours.

Prerequisite for all other courses in Economics except Economics A.

2. Money and Banking.—An examination of the nature and functions of money. Theory of credit. Origin and development of banking. Domestic and foreign exchange. Bank currency. The clearing house. Commercial banking. Bank supervision. Federal Reserve System. Foreign banking systems.

Junior and Senior course. Three periods, first semester. Credit of three semester hours.

5. Business Law.—This course is designed to give the student a knowledge of the legal rights and obligations arising out of common business transactions. The fundamental laws pertaining to contracts, partnerships, corporations, negotiable instruments, sales, etc., are examined.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

6. Accounting Principles.—This course deals with some of the more advanced phases of accounting, such as depreciation, the reserve, goodwill, deficiency accounts, realization and liquidation, cost accounting and auditing.

Junior and Senior course. Three periods, first semester. Credit of three semester hours.

7. Labor Problems.—A study of the relation of the employee to the employer, including such topics as woman and child labor, immigration, sweating system, poverty and unemployment, strikes and boycotts, labor organizations, agencies of industrial peace, profit sharing, conciliation and arbitration, industrial education and labor laws.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

- 8. Corporation Finance.**—A study of business structure in simple and compound forms as individual enterprise, partnership, joint stock company, corporation, combination trusts, community of interest organization, holding company and complete consolidation. Promotion, Underwriting. Reorganization and receivership. Public policy with reference to corporation and trust problems.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

- 9. Railway Transportation.**—A survey of the development of transportation and a discussion of its social and economic influence. Railway problems in the United States. Methods of competition, combination, discrimination and investments. Stock watering and speculation. Government regulation. The problems after the war of federal administration and ownership of the railroads.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

- 11. Resources and Industries of the United States.**—A historical and descriptive course emphasizing the economic factors in the expansion and progress of the United States and serving to give the student a concrete picture of the modern world of industry, including agriculture, manufacturing, industrial combinations, domestic and foreign commerce, currency and banking, labor organizations, etc.

Junior and Senior course. Three periods, first semester. Credit of three semester hours.

- 12. Business Management.**—A descriptive and analytical study of the internal and external problems involved in the management of an industrial or mercantile establishment, having regard especially to the economic principles underlying location of the plant, organization of the administration, management of the personnel, systems of wage payment, shop control, and marketing of the product.

Junior and Senior course. Three periods, first semester. Credit of three semester hours.

POLITICAL SCIENCE.

Professor Johnston.

A Major in Political Science includes Courses 1, 3, 4, 5, 7.

- 1. American Government and Politics.**—Colonial origins of American institutions. Evolution of Federal and State constitutions. Evolution of political issues. Development of party machinery. General features of federal and state government. Executive, legislature, and judiciary. Administration. Foreign affairs. Commerce. Taxation and finance. State and municipal organization and functions. Local rural government.

Sophomore course for all students, who may, however, take Economics 1 (Principles of Economics) instead. Three periods thruout the year. Credit of six semester hours.

Prerequisite for other courses in Political Science.

- 3. European Governments.**—A study of the structure and function of European governments with constant reference to American federal and state governments.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1922-23 and alternate years..

- 4. Constitutional Law.**—A study of the American Constitution viewed in the light of the Supreme Court decisions. This course is given for those who wish to make an extended study of the basic principles of United States Government.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1921-1922 and alternate years.

- 5. International Law.**—The development of the rules of international law, the rights and obligations of nations in times of war and of peace, the settlement of international disputes are considered.

Junior and Senior course. Three periods, second semester. Credit of three semester hours. Given 1921-1922 and alternate years.

- 7. Municipal Government.**—A description of the organization of municipal government in the United States including an

account of the various organs, their relations to one another, the powers and responsibilities of legislative and administrative officials. An examination of commission and city manager plans of government.

Junior and Senior course. Three periods, first semester. Credit of three semester hours. Given 1922-23 and alternate years.

BIOLOGY

Professor Shilliday.

A Major in Biology includes Courses 3, 4 (or 5), 6, 7 and 8.

- 1. General Biology.**—A course designed to give the student a conception of the fundamental facts and theories of biological science. The course includes a study of such typical examples of plants and animals as are suitable to demonstrate the basic principles of structure and function of living organisms. The laboratory work includes, in addition to the study of specimens, instruction in simple methods of preparing material upon which the laboratory studies are made.

Freshman course. Three recitations and three two-hour laboratory periods each week, first semester. Credit of four semester hours.

Prerequisite for all other courses in the Department.

- 2. Vertebrate Zoölogy.**—The course is based upon a careful laboratory study of representative forms of each class of the vertebrates, except mammals. Special emphasis is placed upon the comparative anatomy of the forms studied, the general physiological function of the organs, and the relationships existing among the various groups, based upon their evolutionary development.

Freshman course. Three recitations and three two-hour laboratory periods each week, second semester. Credit of four semester hours.

Prerequisite, Course 1.

- 3. Anatomy.**—A course in comparative mammalian anatomy and the elements of human anatomy and physiology. The

course is based upon a careful study of the human skeleton and a thoro dissection of a typical mammal, cat, or rabbit.

Sophomore course. Three recitations and three two-hour laboratory periods each week, first semester. Credit of four semester hours.

Prerequisite, Courses 1 and 2.

- 4. Embryology.**—A course demonstrating the principles of vertebrate embryology, based upon the frog, chick, and pig. The work includes laboratory studies of the histology of adult reproductive organs, development and maturation of sex cells, segmentation, development of the germ layers and organs, and the formation of the external form of the body. The laboratory work includes the study of prepared slides, the preparation of whole mounts of chick embryos, and the technique of preparing serial sections and their use.

Sophomore course. Three recitations and three two-hour laboratory periods each week, second semester. Course alternates with Histology; offered 1923-1924 and alternate years. Credit of four semester hours.

Prerequisite, Courses 1, 2, and 3.

- 5. Mammalian Histology.**—This is mainly a course in human histology, and wherever possible human tissues are used in the laboratory work. The work covers those structures ordinarily included in general histology, and includes a thoro study of the primary tissues and the main organs. Considerable time is given to the technique of slide preparation, from the living material to the finished slide. In addition to the slides prepared by himself, the student has access to the slide library containing several thousand slides.

Sophomore course. Three recitations and three two-hour laboratory periods each week, second semester. Course alternates with Embryology; offered 1922-1923 and alternate years. Credit of four semester hours.

Prerequisite, Courses 1, 2, and 3.

- 6. Botany.**—The course is intended to give the student an appreciation of the rôle of plants in nature, their general structures, physiological functions, and relations to man. The

laboratory work includes the study of typical representatives of the main groups of plants, special attention being given to the bacteria, molds, and flowering plants. In field work the student becomes familiar with the forest trees of the community, and a herbarium of spring flowers is prepared.

Two recitations and two two-hour laboratory periods each week thruout the year. Credit of four semester hours.

Prerequisite, Course 1.

- 7. History of Biology.**—This course is designed to give the student an appreciation of the historical growth of biological science, and based upon this a clearer appreciation of the present status of our knowledge of the various biological fields of study. The course presupposes a knowledge of technical laboratory training in several biological sciences in order to follow the course profitably. The work is based upon Locy's "Biology and Its Makers." Work includes class exercises and library reading.

Three recitations each week, second semester. Credit of three semester hours.

Prerequisites, Courses 3, 4, 5, and 6, or equivalent.

- 8. Physiology.**—A course of instruction in the general physiology of the human body, dealing especially with the functions of Excretion, Digestion, Circulation, Respiration, and Reproduction. As a foundation for interpretation of general functions a study is made of selected microscopic slides showing the essential cellular structures of the main organs.

Three recitations and one two-hour laboratory period each week, first semester. Credit of four semester hours.

Prerequisites, Courses 2 and 3.

- 9. Biological Seminary.**—A course for advanced students and those preparing to teach. Work consists of reading and discussion of material appearing in the current journals, or reviews of recent books. Designed to familiarize the student with the use of scientific publications.

Elective course. Open to those who are able to pursue the course with profit. Amount of work and credit to be determined. Class meets alternate weeks thruout the year.

HEALTH AND SANITATION.**(Biology 10.)***Professor G. D. Stahley, M. D.*

This branch of instruction consists of weekly lectures, during the year, on the fundamental principles of Sanitation and Hygiene, for which a credit of two semester hours is given. It also includes brief courses of lectures on personal hygiene to the college Freshmen and to the Academy students. It also provides an arrangement by which cases of sickness are immediately reported, so as to forestall serious illness. There is likewise a medical examination of all new students to ascertain physical defects, and a personal supervision of attendance on required physical training for all non-R. O. T. C. Sophomores and Freshmen. A weekly or semi-weekly sanitary inspection of all students' rooms and dormitories is also here included.

It is believed that these services are helping to provide needed health education as well as maintaining good health conditions in the student body.

CHEMISTRY.*Professors Breidenbaugh and Stover, Mr. Dickson and Assistants.*

A Major in Chemistry includes Courses 1, 2, 3, 4, 7, 8.

The courses in chemistry are not designed to prepare specialists in any department of the subject, but to give a general training in the science. The successful completion of these courses will prepare the student to enter on graduate or professional studies in any leading university, or qualify him for a more successful pursuit of any technical business, or fit him to teach chemistry in secondary schools.

The instructors are in daily attendance during the college term from 8 to 12 and from 1 to 4 except on Saturday afternoons.

- 1. General Chemistry.**—No previous acquaintance with the subject is required. Those offering chemistry for admission will be allowed to substitute, as far as is best for the in-

dividual, from Course 2. The general principles and the fundamental laws of the science are included in the course, which consists of lectures, readings from approved text-books—such as Remsen's "College Chemistry," Newell's "Inorganic Chemistry for Colleges," Kahlenberg's "Outlines of Chemistry"—and laboratory work for which careful record in note-books is required. There are daily quizzes and frequent examinations. The last several weeks of the course are devoted to a practical review and examination in the determination of a certain number of substances, based on the results of previous study.

*Three lectures and six laboratory hours weekly for one year.
Credit of eight semester hours.*

- 2. Qualitative Analysis.**—The student, following an outline prepared for the purpose, becomes acquainted with the general reactions of the elements of the several groups and from these data constructs the scheme of analysis which is applied in a number of determinations. There is constant supervision and personal conference over the work. Reference book, Fresenius' "Qualitative Analysis."

*One lecture and nine laboratory hours weekly for one year.
Credit of six semester hours.*

Prerequisite, 1.

- 3. Quantitative Analysis.**—While such lectures as are desirable are given, this is essentially an individual laboratory course. An assigned minimum of work is required. Reference book, Fresenius' "Quantitative Analysis."

Nine hours of laboratory work weekly for one year. Credit of six semester hours.

Prerequisite, 1 and 2.

- 4. Organic Chemistry.**—Lectures and laboratory work. The laboratory work is partly preparations and partly the approximate analysis of animal and plant substance.

A. Three lectures weekly during the first semester. Credit of three semester hours.

B. Group IV. Eighteen laboratory hours weekly during the first semester. Credit of six semester hours.

C. Group V. Nine laboratory hours weekly during the year. Credit of six semester hours.

Prerequisite, 1 and 2.

- 7. Special Quantitative Methods.**—Students who are qualified are offered courses in advanced and applied analysis—such as mineral, ore, and water analysis, the examination of food stuffs and manufactured articles.

Such hours as may be arranged for during Senior year, or during Junior year by such as have completed the other work in the department. Credit of six to ten semester hours.

- 8. Industrial Chemistry.**—A course of class-room exercises. *Three periods, second semester. Credit of three semester hours. Prerequisite, 1, 2, and 3.*

GEOLOGY AND MINERALOGY.

Professor Breidenbaugh.

- 1. Dynamical Geology.**—This course of lectures gives the student an acquaintance with the facts concerning inorganic geology, and a discussion of the dynamical agencies which have been operative in bringing the earth to the condition in which we now find it.

Field work and the preparation of papers from personal observation and practical application to the work. Frequent examinations are held.

Two periods, first semester. Credit of two semester hours.

- 2. Historical Geology.**—A comprehensive discussion of the principles of evolution, with illustrations from historic geology.

The student is assigned readings from the text-books of Dana, Le Conte, Chamberlain and Salisbury, and other authors.

Two periods, second semester. Credit of two semester hours.

- 3. Mineralogy.**—Following a short course of practical work in Crystallography, there is a series of determinations of not less than one hundred minerals by their physical and blowpipe characteristics.

Two periods thruout the year. Credit of four semester hours. Prerequisite, Chemistry 1.

MATHEMATICS.

Professor Arms, Mr. Wood, and Mr. Myers.

A Major in Mathematics consists of at least eighteen hours, twelve of which must be chosen from the following:

Mathematics 6, 7, 8, 9, 10, 14. Mathematics 6 (Calculus) is required of all students majoring in Mathematics.

The courses in Mathematics are divided into Pure Mathematics and Commercial Mathematics, the latter being designed especially for those preparing for the work of a computer, statistician, accountant, or employee of an insurance company.

Six semester hours are required of all Freshmen. Since the available courses vary with the entrance Mathematics offered and with the intended major, the following table has been prepared for the guidance of Freshmen and their advisers.

Entrance Units	Intended Major.	Advised Freshman Math.	
		First Sem.	Sec. Sem
1 or more in Alg.	Business Admin.	Math. 2	Math. 11
1 in Alg., 1 in Geom.	Engineering	Math. 1 and 3A	Math. 4
1 in Alg., 1 in Geom.			
$\frac{1}{2}$ in Trig.	Engineering	Math. 1A and 3A	Math. 4
1 in Alg., 1 in Ccm.			
Arith.	Any	Math. 2	Math. 11
1 in Alg., 1 in Geom.	Any except Educ.,		
	Eco., Math., or Phys	Math. 1	Math. 2
1 in Alg., 1 in Geom.	Educ. or Economics	Math. 2	Math. 13 or 11
1 in Alg., 1 in Geom.	Math or Physics	Consult the Department	
1 in Alg., 1 in Geom.			
$\frac{1}{2}$ in Trig.	Any	Math. 3	Math. 5

Requirement 8A for the B.S. degree may be satisfied in part by one or two year-courses in Mathematics including six or twelve semester hours respectively chosen from Mathematics 3, 4, 5, 6, 10, 12, 13, 14.

PURE MATHEMATICS.

- 1. Plane Trigonometry and Algebra.**—Definitions and properties of the trigonometric functions; algebraic theory of exponents, theory and use of logarithms; solutions of triangles. *Three periods, first semester. Credit of three semester hours. Prerequisite: one unit of Algebra and one of Geometry.*

1A. Plane Trigonometry.—A rapid survey of the essentials, followed by De Moivre's theorem and hyperbolic functions.

One period, or the equivalent, first semester. Credit of one semester hour. Required of Freshmen in Engineering who offer Trigonometry for entrance.

Prerequisite: one-half unit of Trigonometry.

2. Advanced Algebra.—Elementary theory of equations; complex numbers, binomial theorem.

Three periods, first semester, and repeated in the second. Credit of three semester hours. Required of Freshmen in Business Administration.

Prerequisite: one unit of Algebra.

3. Elementary Analysis.—For description and prerequisite see Mathematics 5.

Three periods, first semester. Credit of three semester hours.

3A. Advanced Algebra.—A thoro introduction to graphs and determinants, limits and series.

Three periods or the equivalent, first semester. Credit of three semester hours. Required of Freshmen in Engineering.

Prerequisite: one unit of Algebra.

4. Analytic Geometry.—The locus of an equation; the line; the conic sections and other curves; introduction to calculus.

Four periods, second semester. Credit of four semester hours. Required of Freshmen in Engineering.

Prerequisite: Math. 3 A.

5. Elementary Analysis.—This together with Mathematics 3 is a unified course designed to introduce the student to the methods, aims, and uses of modern mathematics. The applications of analysis to the natural sciences will be emphasized.

Three periods, second semester. Credit of three semester hours.

Prerequisite: One unit of Algebra, one of Geometry, and one-half of Trigonometry, or Math. 1 and 2.

6. Differential and Integral Calculus.—The fundamental formulae of differentiation with applications; series and the expan-

sion of functions; the definite and the indefinite integral; applications, including areas and volumes.

Three periods thruout the year. Credit of three semester hours for each semester. Required of Sophomores in Engineering and students majoring in Mathematics. Sophomores in Industrial Engineering will take only the first semester.

Prerequisite: Math. 4 or 5.

7. Differential Equations.—The theory and devices which will enable the student to integrate ordinary and partial differential equations.

Three periods thruout the year. Credit of six semester hours.

Prerequisite: Math. 6.

8. Modern Geometry.—A choice from the following is offered to advanced undergraduate and graduate students; Analytic Geometry of Space, Projective Geometry, Foundations of Geometry.

Three periods during at least one semester. Credit of three or more semester hours.

Prerequisite: Math. 3 or 4.

9. Modern Analysis.—A similar choice from: Higher Calculus, Theory of Functions.

Three periods during at least one semester. Credit of three or more semester hours.

Prerequisite: Math. 6.

10. Teachers' Course.—The methods of teaching the secondary school subjects, the history of elementary mathematics, and practice teaching so far as is practicable.

Two periods thruout the year. Credit of two semester hours for each semester.

COMMERCIAL MATHEMATICS.

11. Commercial Algebra.—An introduction to the mathematics of investment, including interest, discount, annuities, amortization, bond values, and sinking funds.

Three periods, second semester. Credit of three semester hours. Required of Freshmen in Business Administration.

Prerequisite: Math. 2.

12. Insurance.—The principles of life-insurance, the computation of premiums, and the valuation of policies.

Three periods, first semester. Credit of three semester hours. Required in the course in Business Administration.

13. Statistics.—A first course in statistical method; the mean, mode, and median; deviations; applications to Biology, Education and Business.

Three periods, second semester. Credit of three semester hours. Required in the course in Business Administration.

14. Investments.—Stock, bond, and investment accounting. The use of compound interest in bond valuation, building and loan associations and the preparation of amortization schedules; methods of charging depreciation. This course is recommended to those preparing for banking, brokerage, or C. P. A. work.

Three periods, second semester. Credit of three semester hours. Required of Sophomores in Industrial Engineering.

Prerequisite: Math. 2 and Accounting Practice (or some experience in accounting).

PHYSICS.

Professor Parsons, Mr. Miller, Mr. Klingaman, and Assistants.

Prerequisite: College Entrance Mathematics. Trigonometry is also strongly advised and is a prerequisite for all students continuing in Physics for more than one year.

Physics courses 1 and 2 below are prerequisite to all the courses which follow except course 12, Astronomy, and 3 and 4 are also prerequisites for all courses that follow except 11 and 12. For a Major in Physics at least 12 semester hours are required in Physics in addition to Courses 1, 2, 3, 4, and also Mathematics courses including usually Calculus and Differential Equations.

1. General Physics.—Mechanics, properties of matter, sound, heat, electricity and magnetism, and light. Lectures and recitations.

Three hours per week thruout the year. Credit of six semester hours.

2. General Laboratory Physics.—A laboratory course designed to accompany Course 1.

Three or more hours per week thruout the year. (One and two periods per week on alternate weeks) Credit of two semester hours.

3A. Electricity and Magnetism and Mechanics.—Including electrochemistry, direct and alternating currents, and electrical machinery, and dynamics. For engineering students and others.

Three hours per week thruout the year. Credit of six semester hours.

4A. Electrical Measurements and Mechanics.—Laboratory course designed to accompany 3A.

Three or more hours per week thruout the year. (One and two periods per week on alternate weeks). Credit of two semester hours.

3B. Electricity and Magnetism and Light, and Chemical Physics.—

Lectures and Recitations. Theory and applications of electricity and magnetism, direct current machinery, electrochemistry, the theory of light, optical instruments. photography, X-rays, radioactivity, and other applications of physics to Chemistry and Biology.

Three hours per week thruout the year. Credit of six semester hours.

4B. Physical Measurements.—Laboratory course designed to accompany 3B.

Three or more hours per week thruout the year. (One and two periods per week on alternate weeks.) Credit of two semester hours.

5. Theory of Light.—Lectures and Recitations. A more advanced course than the subject of Light in 3B, designed primarily for students taking a major in Physics. To be offered in 1922-1923.

Three hours per week, first semester. Credit of three semester hours.

7. Recent Advances in Physics.—Radioactivity, discharge of elec-

tricity through gases, X-rays, photoelectricity, electron theory, electric waves, and other topics.

Two hours per week thruout the year. Credit of four semester hours.

- 8. Mathematical Physics.**—Lecture course in mathematical Physics for graduate students (or other advanced students). The topics treated may vary from year to year. Such subjects as mechanics, hydrodynamics, the kinetic theory of gases, the theory of sound, electricity and magnetism, physical optics, and the electro-magnetic theory, are treated.

Two or three lectures per week thruout the year.

Prerequisite, Physics 1-4, and Mathematics 6.

- 10. Advanced Laboratory Physics.**—This comprises all the advanced laboratory work not included in the preceding courses, and is designed for graduate students and others specializing in Physics. The experiments or problems assigned are variable and may include research on some assigned topic.

The course may be taken thru more than one year, credit being given proportional to the work done.

- 11. Physics Seminary.**—A meeting, for one hour a week thruout the year, of the advanced students, at which papers on assigned topics are presented, current topics are discussed, and reports given of recent work of investigators (obtained from reading the journals).

Credit of two semester hours.

- 12. Descriptive Astronomy.**—A course in general and descriptive astronomy (not mathematical). Text-book recitations, lectures, and some observatory work (observations of moon, planets, stars and nebula). Elective for all students.

Two hours per week, first semester. Credit of two semester hours.

- 13. Physical Chemistry.**—Problems in Physical Chemistry, Thermo Chemistry and Electrochemistry. Given during 1921-1922. May not be offered in 1922-1923.

Two lectures and one period of laboratory work per week thruout the year. Credit of six semester hours.

Prerequisite: Physics 1-4; Chemistry 1, 2.

LECTURESHIP ON CONSTITUTIONAL LAW.

Henry Wolf Bicklé, Esquire.

Four lectures on the Constitution of the United States; including (a) a discussion of the American Doctrine of Constitutional Law, and (b) a consideration of the commerce clause, (c) of the clause forbidding the impairment by the States of the obligation of contracts, and (d) of the guarantees of personal liberty and equality contained in the Fourteenth Amendment.

STUCKENBERG LECTURESHIP.

Mrs. Mary G. Stuckenberg has given a fund of \$1,000 for the establishing of a Lectureship in Sociology in honor of her late husband, J. H. W. Stuckenberg, D.D., LL.D., by the terms of which the College will have annually a lecture on some phase of Sociology from the standpoint of Christian Ethics by specialists in this important field. The lecture is given at such a time as is convenient to the lecturer chosen for the year.

BELL LECTURESHIP.

A fund of \$2,100 from the estate of the late Rev. Peter G. Bell, ex-'60, has been received by the college for the establishment of a Lectureship on The Claims of the Gospel Ministry on College Men. The main object of this foundation is "to keep before the students of the College the demand for men for the Christian ministry and the conditions of the age qualifying that demand."

COLLEGE LECTURE COURSE.

The College Board of Trustees annually appropriate money sufficient for the securing of a number of the best scholars and speakers in the country to deliver lectures, usually one each month, to the whole student body on literary and scientific topics. Some are illustrated and all are free to the students and to the general public.

Y. M. C. A. LYCEUM COURSE.

The College Y. M. C. A. conducts at a very reasonable cost a series of interesting lectures and musical entertainments.

ENGINEERING COURSES.

ENGINEERING COURSES.

Courses are offered in

Industrial Engineering
Civil Engineering

Mechanical Engineering
Electrical Engineering

There is an increasing demand for men with training that has the technical attitude. There is, with this, a widening field for the application of technical knowledge and an increasing degree of specialization. To meet this demand we are offering courses that add to a core of cultural studies those subjects that form the foundation of all engineering work. During the first two years of the courses all students pursue the same subjects. At the end of that time the courses partially divide. Those who do not wish to follow a strictly technical course but expect to go into professions that have to do largely with manufacturing or handling products of a technical nature, will take the course in Industrial Engineering. This course combines the more practical subjects of both Engineering and Business Administration. It will meet the demands of those who expect to work into executive or administrative positions rather than those having to do with design.

Other students according to their interests will decide between Civil Engineering on the one hand and Mechanical and Electrical Engineering on the other. These three courses are largely parallel during the Junior year. Men following either of these courses will in all likelihood specialize after graduation; but since it is very hard to forecast a man's exact career and the direction in which he may develop, it has not been deemed wise to specialize any further in these courses, but to try to give each man a foundation on which he may build his special work.

Civil Engineering covers a widening field especially in view of the large activity in transportation problems, including the use of the highways; and the enlarged demands of the public on governing bodies for better living conditions. If these demands are to be met there must be a body of men having engineering training to carry on the work needed

The increased use of automotive vehicles and the spread of the

methods of "mass production" indicate a part of the field of Mechanical Engineering. Indeed the automobile manufacturers say they can use several times as many trained engineers as the entire output of all the technical schools. The increased cost of coal and the consequent use of electric power call for a large supply of Electrical Engineers.

Prerequisite to the Engineering Courses are Advanced Algebra, Plane Geometry and Trigonometry, and two credits in one Modern Language. Students not having had Trigonometry can make the same up during the Freshman year. Students not having credits in Modern Language or starting a language in College must take the same language for two years instead of the one year called for in the list of required studies.

The following technical subjects underlie all engineering training, and are required of all students in Engineering Courses.

- 1. Elementary Mechanical Drawing.**—Use of instruments, orthographic, isometric and cabinet projections, simple sections, intersections and developments, lettering, sketching, tracing and blueprinting.

Three hours thruout the year. Credit of two semester hours.

Note. The College provides drawing desks, etc., but each student furnishes his own drawing outfit, costing about thirty dollars. Students are urged to avoid the purchase of cheap instruments which soon become worthless. Engineering students use their drawing instruments thruout their course and for years afterward. The purchase of an outfit of good grade is therefore economy.

- 2. Descriptive Geometry.**—The first semester's work comprises descriptive geometry, problems relating to the point, line, and plane in space, followed by a thoro drill in sections, intersections, and developments, with applications to engineering and architectural problems. The instruction is designed to develop in the student the power of concise reasoning. During the second semester the work is a continuation of Course 1.

Two hours of recitation and four hours of drawing weekly, first semester. Two periods of three hours each, drawing, second semester. Total credit of four semester hours.

- 3. Mechanics (A). Statics and Dynamics.**—Forces in equilibrium, simple structures, translation and rotation, work, energy, power. Part of the periods are two hours to give time for a full discussion of difficulties.

Three recitations weekly thruout the year. Credit of six semester hours.

Prerequisite, Mathematics 3 and 4.

- 5. Hydraulics.**—A study of the mechanics of water at rest and in motion, with applications to a variety of problems relating to the pressure of water and to its flow in natural and artificial channels, pipes, etc.

Three recitations weekly, Credit of three semester hours.

Prerequisite, Engineering 3 and Mathematics 5.

- 6. Materials Testing.**—Recitation and laboratory course in the study of the properties of engineering materials. In the first semester the standard tests of cement, mortar, and sand are made and compared. The common tensile, compressive, and transverse tests on steel, timber, and concrete are made and discussed. The solution of practical problems is emphasized. During the second semester the results of the laboratory work of the first semester are applied in the application to the use of the materials in engineering work.

Two recitations and three laboratory hours weekly, first semester. Credit of three semester hours. Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Engineering 3 and 4, and Mathematics 5.

- 7. Elements of Electrical Engineering.**—The application of the fundamentals of electricity and magnetism to electrical engineering practice. Theory, structure, and operation of electrical machinery. Recitation work supplemented by simple laboratory experiments.

Three recitations, first semester; two recitations and three laboratory hours, second semester. Credit of six semester hours.

Prerequisite, Physics 3, and 4, and Engineering 5.

- 8. General Engineering.**—A course partly of lectures and partly of problems intended to call to the student's attention

some of the requirements in character and mind for success in engineering. The use of the slide rule, tables as given in the usual hand-books and the working out of a number of simple problems make up the remainder of the course.

Two hours of recitation for one-half semester. Credit of one semester hour.

- 11. Plane Surveying.**—This course gives drill in the use of the more common surveying instruments, in the best methods of keeping notes, and in the computations and mapping required in connection with the usual work of a surveyor.

Two hours of recitation first semester and one-half second semester. Credit of three semester hours.

- 12. Surveying (A).**—Practice work done in connection with (11). Partly field work giving a drill in the use of the more common surveying instruments and partly work in the class room plotting surveys and making the necessary computations.

Three hours per week thruout the year. Credit of two semester hours.

INDUSTRIAL AND CIVIL ENGINEERING.

Professor Clutz and Mr. Reen.

- 13. Surveying (B).**—Field work done during the Summer between the Junior and Senior years. Topographic surveying using a variety of instruments including the plane table. Railroad surveying. Adjustment of instruments. Daily recitations are used to coördinate the instruction.

*Credit of two semester hours.**

- 14. Astronomy and Geodesy.**—Spherical Astronomy as used by the surveyor and Elementary Geodesy.

Three hours per week, first semester. Credit of three semester hours.

*Not given in the Summer of 1922.

- 17. Railroads (B).**—A course in the economics of railroad construction and operation, maintenance and valuation.
Three hours, second semester. Credit of three semester hours.
- 18. Structural Design (A).**—Stresses in framed structures, principally roof trusses and bridges of various types. Graphical methods of solution are employed.
Two hours of recitation and four hours of drawing weekly, first semester. Prerequisite, Course 3. Credit of three semester hours.
- 19. Structural Design (B), (C).**—A course in the strength of materials as applied to the analytical design of structures of wood and steel. Beginning with beams the student finally makes all the calculations necessary in the complete design of a plate girder and trusses of the riveted and pin connected types.
Given in the second semester, Junior year, and first semester, Senior year. Two hours recitation and four hours computation or drafting weekly in the Junior year; two hours recitation and four hours computation or drawing in the Senior year.
- 28. Structural Design (D).**—A course in the use and design of reinforced concrete.
Given second semester, Senior year. Two hours recitation and four hours computation or drafting. Credit of two semester hours.
- 20. Structural Drafting.**—The making of detailed drawings for the component parts of a steel structure. Conformity with the best practice is required, and the drawings are carefully checked.
Six hours of drawing weekly, second semester. Credit of two semester hours.
- 21. Contracts and Specifications.**—The elements of contract law as applied to the mutual relations of engineer, contractor, and owner. Critical review of typical specifications and practice in specification writing.
Three recitations weekly, first and second semester. Credit of six semester hours.
- 22. Masonry.**—Design and construction of stone and concrete structures, heavy foundations, arches, walls, and dams.

Instruction is in part by recitation, but includes drafting-room work in the design of several typical structures.

Two recitations and three hours of drawing weekly, first semester. Credit of three semester hours.

- 23. Highways.**—Recitations on the design, construction, and maintenance of roads and pavements, with especial consideration of the exigencies of present-day traffic.

Three recitations weekly, second semester. Credit of three semester hours.

- 24. Water Supply Engineering.**—The quantity and quality of water from various sources. Works for the collection and storage of water, for its purification and for its distribution.

Three recitations weekly, second semester. Credit of three semester hours.

- 25. Sewerage.**—Various types of design and construction are discussed in recitations. Plans for a small sewer system are made by each student. Modern methods for the purification and disposal of sewage and garbage. Visits are made to plants under construction and in use.

Three recitations weekly, second semester. Credit of three semester hours.

- 26. Civil Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, thruout the year. Credit of two semester hours. Open only to Seniors.

- 27. Industrial Economics.**—The organization of the modern industrial corporation. The methods of keeping track of and setting forth the facts of the progress of production, especially as shown by graphic methods. The place of the engineer in the industrial organization.

Three hours recitation per week thruout the year. Credit of six semester hours.

MECHANICAL ENGINEERING.

Professor Rosenstengel.

- 31. Shop Work (A).**—Simple exercises in the formation of green sand moulds, supplemented by lectures on modern foundry practice. Bench and lathe work in wood, elements of pattern making.

Six laboratory hours weekly, first semester. Credit of two semester hours.

- 32. Shop Work (B).**—Forge practice in iron and steel. Shaping, hardening, and tempering of tools. Machine and bench work in metals. Lectures on modern shop practice.

Six laboratory hours weekly, second semester. Credit of two semester hours.

- 33. Kinematics.**—Theory of mechanisms, instant centers, cams, gears, linkages, velocity and acceleration diagrams, etc. Recitation work supplemented by the solution of practical problems in the drawing room.

Two recitations and three hours of drawing weekly, first semester. Credit of three semester hours.

Prerequisite, Course 2.

- 34. Machine Design (A).**—An elementary course showing the application of the fundamentals of mechanics and kinematics to machine design. Selection of mechanisms for specified work, analysis of energy and force problems in machines, and proportioning of detailed parts from theoretical and practical considerations.

Two recitations weekly, second semester. Credit of two semester hours.

Prerequisite, Course 6 (1st semester), 4, and 33.

- 35. Machine Design (B).**—Application of principles of Course 34 to the design of two typical machines, including all necessary computations; working drawings of most important parts, and a finished assembly drawing.

One recitation and six hours of drawing weekly thruout the year. Credit of six semester hours.

Prerequisite, Course 34.

- 36. Heat Power Engineering (A).**—Thermodynamics of gases and vapors, theoretical gas cycles, application of theory to problems of commercial heat engines, engine performances and efficiencies.

Three recitations weekly, first semester, two recitations weekly, second semester. Credit of five semester hours.

Prerequisite, Mathematics 5, and Physics 1 and 2.

- 37. Heat Power Engineering (B).**—A continuation of Course 36. Fuels, combustion, boilers, gas engines, steam engines and turbines, power house auxiliaries, etc. Efficiency and economy of operation. Selection and combination of elements for power houses. This study covers the theory necessary for Course 38.

Three recitations weekly thruout the year. Credit of six semester hours.

Prerequisite, Course 36.

- 38. Power Plant Design.**—Design of a typical power plant, selection and arrangement of main units and auxiliaries. An outline drawing is made showing the location and arrangement of boilers, turbines, condensers, pumps, etc., the provision for coal and ash handling, and storage. Economic features of power house design emphasized.

Six hours of computation or drawing, one hour recitation, weekly, second semester. Credit of three semester hours.

May be taken only in conjunction with Course 37.

- 39. Mechanical Engineering Laboratory.**—Calibration of common engineering measuring instruments, such as steam guages, thermometers, indicator springs; determinations of quality of steam; measurements of power; efficiency tests of boilers, gas engines, pumps, etc. Computation periods.

Three laboratory hours weekly, first semester. Credit of one semester hour.

Prerequisite, Course 36.

- 40. Mechanical Engineering Seminary.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, second semester. Credit of one semester hour. (Open only to Seniors.)

ELECTRICAL ENGINEERING.

Professor Rosenstengel.

45. Theory of Electrical Machinery.—Fundamentals of the electric and magnetic circuit; representation of alternating currents and voltages by vectors and complex quantities; study of the alternating current circuit; theory of transmission lines; transformers, alternators, synchronous and induction motor, direct current machines, etc.

Four recitations weekly, first semester. Three recitations weekly, second semester. Credit of seven semester hours.

Prerequisite, Course 7.

46. Characteristics of Electrical Machinery.—This course supplements the work of Course 45. Problems in alternating current circuits. Outline design and predetermination of performance characteristics of transmission lines, transformers, alternators, alternating current motors and direct current generators and motors. Practice is given in the use of standard hand books.

Nine hours of computation weekly, second semester. Credit of three semester hours.

May be taken only in conjunction with Course 45.

47. Electrical Engineering Laboratory.—Elementary and advanced experimental work in electrical engineering: the study of polyphase alternating current circuits, shape of A. C. waves, determination of the magnetic properties of steel and iron; commercial testing of alternators, transformers, synchronous motors, induction motors, D. C. machines, etc.

Three laboratory hours weekly, first semester; six laboratory hours weekly, second semester. Credit of three semester hours.

Prerequisite, Course 7.

48. Electrical Engineering Seminary.—Oral and written reviews and discussions of current technical articles.

One hour weekly, second semester. Credit of one semester hour. (Open only to Seniors.)

49. Telephones.—Theory of the telephone. The design and con-

struction of telephone instruments, switchboards, and transmission lines.

Two recitations, second semester. Credit of two semester hours. Prerequisite, Course E. E. 7.

Trips of Inspection.

Several short tours are arranged during the course for the inspection of engineering structures, power plants, shops, manufacturing establishments, etc., in the vicinity. Reports are prepared by each student from his individual notes.

Engineering Library.

A departmental library and reading room of reference books, periodicals, and technical reports is being built up in connection with the College Library. Students have access to the following publications:

"Engineering News-Record," "Municipal Journal," "Railway Review," "Electrical World," "Industrial Management," and "American City."

Engineering Equipment.

For a detailed description of the equipment in engineering see page 119.

MILITARY SCIENCE AND TACTICS.

(Reserve Officers' Training Corps.)

Major Courtland Nixon, U. S. Army, Capt. George N. Randolph, Infantry, D.O.L., and 1st Sgt. J. W. Oliver, Infantry, D.E.M.L.

As a part of the program for national preparedness, Congress by Act of June 3, 1916, authorized the establishment and maintenance in civil institutions of learning fulfilling certain requirements, of units of the Reserve Officers' Training Corps, so that in time of national emergency there may be a sufficient number of educated men, trained in military science and tactics, to officer and lead intelligently the large armies upon which the safety of the country will depend. Under the provisions of this Act the President of the United States has established an infantry unit, senior division, of the Reserve Officers' Training Corps in this College and has detailed a regular army officer to serve here as Professor of Military Science and Tactics, another officer, and a noncommissioned officer to serve as his assistant. In order to encourage students to enter this corps said Act of Congress makes very liberal provisions furnishing the members free of charge all the needed equipment in arms, ammunition, uniforms, and, in the case of those taking the advanced course, additional uniforms, training camp expenses, and an allowance in cash equal to the regular army garrison ration. The work includes lectures and classroom work as well as military drill, target practice and gymnastic exercises. A lecture on the tactics of the battle of Gettysburg will be given by a representative of the Battlefield Commission to members of the Senior class. West Point Cadets came to Gettysburg annually prior to the World War, for similar instruction. The mental as well as the physical benefits which a student may derive from this course are obvious; and it supplies in the most approved form that element of training in discipline and obedience to authority which has been largely lacking in the educational system of our country. There is a great demand

thruout the country for teachers of high school grades who are able to give military instruction.

A course if elected becomes exactly like a required course in mathematics or history, and the student must complete it, but other than this it involves no compulsory military obligations.

The course in Military Science and Tactics is divided into two parts, each one requiring two years of work.

BASIC COURSE.

Any student electing this course must devote an average of at least three hours per week for two successive years to the work required (First Year and Second Year).

ADVANCED COURSE.

When any member of the Reserve Officers' Training Corps has completed (here or elsewhere) the first two academic years of service, and has been recommended for further military training by the President of the College and the Professor of Military Science and Tactics, he will be furnished by the U. S. Government commutation of subsistence (an allowance) equal to the regular garrison ration prescribed for the Army. This allowance now is 40 cents per day, extending thru and including the summer recess between third and fourth years. A student electing to take this advanced course will be required to devote an average of at least five hours per week to the work during the remainder of his college course (Third Year and Fourth Year). He must also attend the training camp prescribed by the Secretary of War between the third and fourth years, his transportation to and from this camp, clothing and subsistence while there, and pay at the rate of one dollar per day, being furnished by the U. S. Government.

OUTLINE OF COURSES IN MILITARY SCIENCE AND TACTICS.

Basic Course.

First Year.

1. An introduction to Military Science including Military Courtesy; Physical Training to develop proper carriage and posture;

also Field Day Events; Infantry Drill; Care and Use of Arms and Equipment; Scouting and Patrolling; Elements of Rifle Marksmanship.

2. Infantry Drill; Guard Duty; Rifle Marksmanship; Individual Infantry Equipment.

Three periods thruout the year. Credit of two semester hours.

Second Year.

3. Military Sketching and Map Reading; Infantry Drill; Infantry Weapons; Bayonet; Automatic Rifle, etc.

4. Infantry Drill; Personal Hygiene and Camp Sanitation; Musketry; Pistol and Rifle Marksmanship.

Three periods thruout the year. Credit of two semester hours.

Prerequisite: Courses 1 and 2.

Advanced Course.

First Year.

5. Field Engineering; Infantry Drill, including Leadership as Sergeants and Lieutenants. Accompanying infantry weapons, one pounder gun.

6. Accompanying infantry weapons, continued, Machine Gun; Stokes Trench Mortar; Infantry Drill and Leadership; Military Law and Rules of Land Warfare; Rifle Marksmanship practical.

Five periods thruout the year. Credit of eight semester hours.

Prerequisite: Courses 1 to 4 inclusive.

Second Year.

7. Minor Tactics; Tactical Walks on the battlefield; Elementary Problems on Sand Table; Infantry Drill, with Command and Leadership.

8. Military History and Policy of the United States; Administration, theoretical and practical; Minor Tactics, Problems

and War Games; Infantry Drill; Command and Leadership.

Five periods thruout the year. Credit of eight semester hours.

Prerequisite: Courses 1 to 6 inclusive.

No student electing one of these courses will be promoted to the next higher class in College or graduated from College unless he has completed the work of the course for the previous year to the satisfaction of the Professor of Military Science and Tactics.

The appointment of cadet officers and noncommissioned officers for the Corps are made from members of the Junior and Senior Classes in College and from members taking post-graduate courses, provided there is a sufficient number. It is the intention to give the student entering the advanced course the benefit of an opportunity of training in a responsible rather than in a subordinate position.

No military duties in addition to the training courses outlined are required from members of the Reserve Officers' Training Corps.

A student having completed these courses will on graduation from College receive his Reserve Officers' Commission issued by authority of the President of the United States, and be eligible for appointment to the Officers' Reserve Corps as a temporary second lieutenant of the regular army in times of peace for purposes of further instruction, for a period not exceeding six months, with all the allowances now provided by law for that grade, but with pay at the rate of \$100 per month.

For those who aspire to enter the ranks of regular army officers from civil life the Reserve Officers' Training Corps in our College offers unexcelled advantages and opportunities.

EQUIPMENT.

Located as it is in the heart of the great Battlefield of Gettysburg, Gettysburg College is admirably situated for conducting courses in Military Science and Tactics. This situation is rendered doubly important when one stops to realize that this very terrain is that used for practically all theoretical instruction given in Minor Tactics all over the country. While other units of the R. O. T. C. are issued maps of this terrain for their theoretical instruction, they are compelled to work out practical problems on

available local terrain (often poorly mapped). This institution enjoys the advantage of conducting its practical work on the same terrain which is studied in the text furnished by the War Department.

Complete equipment is furnished by the Government at no cost to the student. In addition to the Service Rifles and Pistols regularly used for drill and target work, there is on hand a complete set of Special Infantry Weapons consisting of Browning Automatic Rifles, Browning Machine Guns, 3-inch Stokes Mortar, 37-mm. Gun, Hand and Rifle Grenades. All of these are used for both theoretical and practical instruction.

For the study of Minor Tactics, complete maps, in different scales, are furnished. These maps are all of the terrain in the immediate vicinity of Gettysburg. This collection is supplemented by a B-H Relief Map with which over one thousand combinations of terrain may be made, thus covering every possible formation of ground over which troops may be required to maneuver.

Complete files of all War Department publications are available in unit headquarters. The system of correspondence, filing, and property accounting is exactly the same as that used in the army. Students are thus enabled to receive a well rounded course in Administration and both see and do the practical work.

Both an indoor and outdoor target range is provided. During inclement winter weather instruction is carried on indoors with sub-calibre rifle and pistol. As soon as the weather permits, firing is started out of doors with the U. S. Magazine Rifle, M'03, Colt Automatic Pistol, Browning Automatic Rifle and Machine Gun.

The first floor of the Gymnasium, which contained a baseball cage and locker room, no longer in use, was entirely transformed for use of the Military Department. The room is now equipped with B. & H. Relief Maps, sand tables used for topography and minor tactics and problems; a relief map of the Gettysburg battlefield, which was largely constructed by Captain Randolph, and completed by the students; nine complete sketching cases, a three inch Stokes mortar, a Browning machine gun mounted on a tripod, a Browning machine gun dismounted on a table with the various parts labeled; three complete Browning automatic rifles, one being dismounted, a thirty-seven millimeter (one pounder) gun with ammunition cart, three Winchester single shot .22 calibre rifles and six sub-calibre Springfield rifles for gallery practice, hand grenades and grenade rifle dischargers.

The recruit who contemplates attending one of the summer

camps gains an idea of his future lodging quarters by inspecting the shelter tent in one corner of the room, where there is on display an entrenching shovel and mattock, wire cutter, bolo, first aid equipment, litters, etc.

The indoor range which is fifty feet in length is used by the members of the R. O. T. C and the rifle club affiliated with the National Rifle Association, for competition between colleges. The bullets strike a steel boiler plate behind the targets. Landscape targets are available for instruction in fire designation and distribution.

FINANCIAL BENEFITS OF R. O. T. C. TO COLLEGE MEN.

When a student enters the unit he receives a complete uniform valued at \$50 and consisting of the following articles of clothing:

1 Coat, woolen	1 Breeches, woolen, pr.
1 Cord, hat	1 Belt, waist
2 Shirts, flannel	1 Leggings, woolen, spiral, pr.
1 Coat, woolen	2 Ornaments, collar
	1 Ornament, sleeve

For each additional year that he remains in the unit, he receives another complete uniform. Thus the student taking the complete course (four years) will receive clothing alone to the value of two hundred dollars.

By completing the advanced course, the student receives the following from the government:

Uniforms @ \$50 for four years	\$200.00
Textbooks	20.00
Commutation of subsistence @ 40c. for 590 days	236.00
Rations in kind at camp	31.00
Ration allowance enroute to and from camp	8.00
Travel allowance @ 5c. for 1,000 miles (average)	50.00
Pay while in camp @ \$1 for 42 days	42.00
Uniform while in camp	25.00
<hr/>	
Total amount received in four years	\$612.00

ROSTER OF OFFICERS AND NON-COMMISSIONED OFFICERS.

Battalion Staff.

R. K. G. Rice	Major
J. D. Glenn	1st Lt. and Bn. Adjutant
J. M. Gentzler	Captain, Special Weapons
Alfred M. Naus	2nd Lt. Supply Officer
R. C. Robinson	Bn. Sergeant Major
R. E. Wertman	Bn. Supply Sergeant

Company Officers.

Company A.	Company B.	Company C.
Capt. P. M. Willard	Capt. D. G. Davis	Capt. W. H. Hill
1st Lt. L. R. Weaver	1st Lt. W. L. Mertz	1st Lt. J. P. Leavy
2d Lt. W. G. McAllister	2d Lt. H. E. McBride	2d Lt. L. C. Dahmen
	2d Lt. J. E. Ridder	2d Lt. E. H. Bixler

Non-commissioned Officers.

First Sergeants.

Company A.	Company B.	Company C.
L. M. Sowers	R. C. Geiselman	L. B. Walter

Platoon Sergeants.

Company A.	Company B.	Company C.
P. Bower	V. J. Congleton	C. E. Stoner
H. T. Uhler	H. W. Webner	T. W. Eshenaur

Sergeants.

C. E. Sebold	F. Stueber	F. L. Snyder
C. L. Kressler		

Corporals.

P. D. Albert	N. L. Altland	W. P. Gundel
O. R. Toms	A. F. Trombore	E. H. Feldman
F. E. Reinartz	D. K. Weiser	D. P. Chambers
C. A. Sloat	G. P. Shetter	E. G. Ports
B. T. Schantz	F. A. Shearer	L. J. Riis
H. E. Yost	R. P. Bentley	H. L. Livengood

SUMMER SCHOOL.

During the past few years there has been a growing demand for summer courses. Much of this arises from the varied preparation furnished by the schools at which the students prepare for college. The student wants a chance to make up the work required to get in line with the regular candidates for graduation. A number of teachers have also wanted an opportunity to pursue courses in the line of their profession. The present program of advancement in the certification requirements of the State will greatly increase this demand. Beginning with this year all High School teachers desiring certification as college graduates must have had at least twelve semester hours in educational subjects. After this year an additional requirement of practice teaching will be made. By 1927 all High School teachers will be required to have a college diploma.

For the reasons given in the preceding paragraph the Board of Trustees has made conditional provision for the organization and conduct of a summer school to begin June 20 and continue for a period of six weeks. The work is in charge of the regular college Faculty and will receive the same credit as if done during the academic year. One period daily for the six weeks will be the equivalent of two semester hours.

Admission and enrollment will be on the same basis as the regular college requirements. The student's previous credits will determine his classification. All new students will be charged an enrollment fee of five dollars. Tuition at the rate of five dollars per semester hour credit, i. e., ten dollars for one course having one period daily thruout the summer term, will be charged of all students.

The administration of the summer school has been placed in the hands of the Faculty members participating in it. The Faculty has appointed the following executive committee: Professors C. F. Sanders, Director; Professor Grimm and Professor F. H. Kramer.

Following is the list of courses which will be offered in the summer school. The descriptions of most of them will be found under their respective departments in this Bulletin. Further information and the regular summer school Bulletin may be had on request from Professor C. F. Sanders, Director of the Summer School, Gettysburg College, Gettysburg, Pa.

Educational Subjects for High School Teachers.

History of Education
Educational Psychology
Introduction to Teaching
Methods of Teaching
School Organization
Philosophy of Education
Educational Sociology

Regular College Courses in Other Departments.**English :**

English Composition
English and American Literature

German :

Elementary Grammar
Reading and Composition

French :

Elementary Grammar
Reading and Composition

Spanish :

Elementary Grammar
Reading and Composition

History :

Modern Europe
The United States

Mathematics :

Plane Trigonometry
Advanced Algebra
Elementary Analysis

Economics: Principles of

Public Finance and Taxation

Political Science:

American Government

Philosophy:

Logic
Ethics
Sociology
Introduction to Philosophy

Physics :

General Physics

Elementary Physics (High School)

Astronomy :

Elementary

Physical Geography (High School)

Chemistry :

General Chemistry

Qualitative Analysis

Biology :

General Biology

Botany

Engineering :

Mechanical Drawing

Elementary Surveying

GENERAL INFORMATION.

The College aims to develop the greatest possible individuality and the highest manhood of the student. The prevailing influences are such as tend to lead young men to an active Christian life and to a full realization of their personal responsibilities. The immediate supervision of the students is in the hands of the President and Dean with the Advisers.

STUDENT'S ADVISERS.

The professor acts as the adviser of all the students having a major in his subject. He exercises oversight in the student's selection of electives and in the general character of his work.

STUDENT COUNCIL.

Without lessening its authority and responsibility, the Faculty has delegated certain duties in government to the student body as an exercise in self-government. The students act through a Student Council consisting of four Seniors, three Juniors, two Sophomores, and one Freshman, elected by their respective classes. This Council acts in certain matters of discipline and in matters concerning the general welfare of the student body, and is one medium of communication between the students and the Faculty. Hazing in any form is forbidden. Any practice involving physical personal injury and bodily harm or the performance of any humiliating action entailing surrender of dignity and self-respect under fear or threat of force, is regarded as hazing. To have or to drink intoxicating beverages is forbidden.

TERMS AND VACATIONS.

The college year of 35 weeks is divided into two semesters. The first semester begins at 11 A. M. on the third Wednesday in September and continues, with recesses at Thanksgiving and Christmas, to the end of January; the second semester begins when the first semester ends and continues, with an Easter recess, to Commencement Day, the second Wednesday of June. The closing days of each semester are devoted to examinations.

RULES GOVERNING CHURCH AND CHAPEL ATTENDANCE.

Every student rooming under college regulations is required to attend, on week days, a prayer service at 7.45 A. M. in Brua Chapel. When absent in any semester FIFTEEN TIMES, the student is warned, and if absent TWENTY-ONE times he is suspended for two weeks.

Every student is required to attend one designated service every Sunday in the College Church. When absent TWO times in any semester the student is warned, and if absent THREE times he is suspended for two weeks. Students affiliated with another denomination than the Lutheran will, *on the parent's written request*, be permitted to attend the church for which request is made, and in such cases the College has no responsibility for regularity of attendance.

As soon as the number of absences designated have been incurred by any student the proctor will give written notice to the Registrar who will then send to the student a warning, or notice of two weeks' suspension, as the case may require.

If the limit of absences from church or chapel, necessitating suspension as a penalty, is reached during the last ten days preceding the close of the college year, the student shall be suspended for the remainder of the year and in addition he shall be deprived of all cut privileges

in either church or chapel, as the case may be, during the next succeeding semester.

When a student, due to protracted sickness or for some other imperative reason, exceeds the number of absences allowed for church or chapel, the Dean is authorized to extend the number of absences allowed before the penalties noted above become operative.

A church absence incurred by reason of absence from town may be cancelled upon presenting in person within three days to the Proctor a statement signed by the Dean that the student was given permission to leave town, or a written statement signed by the officiating Minister to the effect that the student attended church on the date in question.

Members of athletic teams and musical organizations, participants in literary contests, and representatives of societies for the purpose of attending conventions, may, on application to the Dean, receive such extension of absence allowance as duties incident to their work on these organizations may require, provided the total absence allowance does not exceed THREE absences from church or THIRTY absences from chapel.

RULES GOVERNING CLASS ATTENDANCE.

(1). Each student is allowed individually 10 per cent. absences from class room work each semester in each course, except in the Department of Military Science and Tactics; the War Department schedule does not authorize reduction in the prescribed number of hours. Fractions are not counted and absences may not exceed 4 in any academic course during a single semester. The student is urged and expected to make use of this allowance of absences only in case of sickness or for some other good reason.

(2). A further allowance of absences may, on peti-

tion, be granted members of athletic teams and musical organizations, to participants in literary contests, and to representatives of societies for the purpose of attending conventions, but in no case shall an individual student be allowed a total of more than 15 per cent. absences. This further allowance in no case to be more than 50 per cent. additional.

(3). Absences are reckoned from the first day of the semester. Any absence on the two days preceding or the two days following any recess is counted as two absences.

(4). Absences beyond the number allowed from class work, in (1) and (2) above, will not be excused for any cause whatever, and no extension of absences will be allowed; and all excess absences in any class count as zero on the daily class grade. But, if any student has not taken his allowed absences needlessly, and has exceeded the allowed amount because of protracted sickness or other imperative necessity, the instructor at his discretion may assign extra work as a substitute for the work missed on account of the excess absences and may credit the grade for this work in the place of the zeros given for the excess absences. The student should understand that he cannot demand this from any instructor as a right, and that such a privilege is more likely to be granted to a student whose previous record for attendance and devotion to daily duties is good than to one whose record is poor.

(5). In case of absences from the class work in any subject in excess of the allowed amount, the instructor may exclude the student from the semester examinations in the subject, or may even give him an F for the semester grade necessitating the repetition of the semester's work in this course. The Faculty may also in case of excess absences in two or more subjects, or in church

and chapel, require the work in all courses of the semester to be repeated.

(6). A student returning to college from a suspension for absence from chapel or church is permitted no absence from chapel or church, as the case may be, for the remainder of the semester and is required to make up the work missed in such manner and at such time as the several instructors may require. For such extra work on the part of the instructors the student must pay to the college Treasurer, for each examination in each course, the sum of three dollars. This charge also applies to absences incurred under item (4), cases of protracted sickness excepted.

(7). Physical training is required of all male students of the Freshman and Sophomore Classes who are not members of the Reserve Officers' Training Corps. When absent from the scheduled exercises in Physical Training four times, the student is warned; when absent five times he is suspended for two weeks.

EXAMINATIONS.

Examinations are held in all subjects at the close of each semester or when, during the term, a subject is completed. Instructors may hold topical or quiz examinations at the time of any of the regular appointments with the class. Absences from these examinations are governed by the rules given above.

CONDITIONS AND DEFICIENCIES.

Freshman entrance conditions must be satisfied by the beginning of the Sophomore year.

No credit is given for a subject reported as E, F, or "inc.," and such a subject remains a deficiency until removed. An "inc." may be removed by the completion of the work within one year from the time when it is in-

curred; at the end of that time an unsatisfied "inc." becomes an F (or E if so recommended by the instructor before the expiration of the time limit), unless the Faculty shall, because of sickness or for an equally good reason, extend the time for removing the "inc." An F can only be removed by repeating the semester's work in the given subject, and the student is held responsible for repeating the subject the next time it is offered. An E means that the student is entitled to one re-examination within the specified time, and it may be removed by passing the regular scheduled examination at the end of the semester's work in the next succeeding class, or a special examination given at such a time as the instructor shall appoint (which time must not conflict with the regular class work of the student), not later than Oct. 10 of the year following the one in which the E has been incurred. The instructor will report the result of any such examination with the grade (or he may report the re-examination as "not passed"). If the student fails to pass the re-examination (or fails without sufficient reason to report for a scheduled re-examination), he can only remove the deficiency by repeating the course.

No student will be allowed to graduate who has an F on his record unless there has been no chance of repeating the work before graduation, and then only if on recommendation of the instructor in charge the Faculty shall allow an equivalent substitute. An E shall not prevent a student from graduating provided he has credit for all of the prescribed work and all of the semester hours required for the given degree.

A student who, at the end of the first semester, receives a grade of F in courses aggregating 9 or more semester hours, is required to withdraw from the college at once and may not be reinstated by the Faculty until the following September, and if reinstated he will be on probation. A student who, at the end of the second semes-

ter, receives a grade of F in courses aggregating 9 or more semester hours may not be admitted to College the next September or at any time except by vote of the Faculty, and if admitted he will be on probation. The Faculty may at any time by special action require any student to withdraw on account of poor scholarship provided the student has had previous warning. A second failure at any time under these rules (after reinstatement) will necessitate immediate and permanent withdrawal from the College.

PROBATION.

If, in the judgment of an instructor, a student, because of indifference or disorderly conduct, is endangering his scholastic standing, the instructor shall notify the Registrar and the student that the latter is on probation in that particular course. At the end of two weeks the instructor shall notify the Registrar whether

(a) the probation is continued, or

(b) the probation is removed.

(Notice of (b) may be given before the end of two weeks).

If a student is on probation in two or more courses he is on general probation commencing the Monday following the receipt (by the Registrar) of the second notice. The general probation

(a) includes ineligibility to represent the college in any way and

(b) warning to the parent or guardian; notice to the student, and director of athletics, and the Faculty; and

(c) cannot be removed before the expiration of one week.

If the Registrar receives notices of sufficient removals of probations to make the number one or none, the general probation is removed on the next Monday.

REINSTATEMENT.

A student who for any reason has been asked to withdraw from the College may not be readmitted without Faculty action.

HONORS.

The following honors will be awarded at the close of each year:

A. Final Honors will be awarded to members of the graduating class meeting the following conditions:

General Final Highest Honors will be awarded to those students who have maintained thruout their four years the grade of A in all of their studies.

General Final Honors will be awarded to those students who have maintained the grade A in at least half of the work of their four college years and have not fallen below the grade B in their studies of the junior and senior years.

Students entering at the beginning of the sophomore year will be awarded the same honors if for three years they meet the above requirements as to grade.

B. Department Final Honors. If the head of any department recommends a student taking a major in that department as having shown special excellence in that work, the student shall be awarded Final Honors in that department provided he does not have a grade below B in more than twelve semester hours of work in other departments.

C. Class Honors for Freshman, Sophomore, Junior, and Senior Years. Highest Honors for the designated year will be awarded to those members of these classes who have maintained the grade A in all of their studies thruout the year.

Class Honors for any particular year will be awarded to those members of the class who have maintained the

grade A in at least half of the work of the year and do not have a grade below B in any of their studies for the year.

These awards are announced at Commencement and published in the next Catalog number of the BULLETIN.

PRIZES.

Muhlenberg Freshman Prize. The interest of a fund of five hundred dollars, contributed by F. A. Muhlenberg, D.D., LL.D., a former professor in this College, is given at the close of each year to that member of the Freshman Class who is found to have attained the highest grade of scholarship in the Classical Course.

Baum Mathematical Prize. Charles Baum, M.D., Ph.D., Class of 1874, of Philadelphia, has contributed five hundred dollars, the income from which is to be given annually to that member of the Sophomore Class who shows the greatest proficiency in Mathematics.

Hassler Latin Prize. Mr. Charles W. Hassler furnished a fund, the interest of which is annually expended for the purchase of a Gold Medal, to be presented to that student of the Junior Class, who, at the end of the year, shall be rated as the best Latin scholar.

Graeff Prize. This prize was founded by Mr. John E. Graeff, Class of 1843. The interest on a fund of \$500 is awarded for the best English Essay from a member of the Senior Class, on a subject previously assigned. The decision is made by a committee appointed by the Professor of English.

Prizes in Debate. The Literary Societies of the College provide three prizes of \$36, \$24, and \$15, respectively, for the encouragement of skill in debating. The first contest takes place about the middle of November between teams chosen by the Sophomore and Freshman Classes, respectively, and the winning team is rewarded with \$15. The second contest between the winning team

and a team from the Junior Class, takes place about the middle of March, and the team that wins this contest receives \$24. The third contest between the second victors and a team from the Senior Class, takes place about the middle of May, and the winners of this contest receive \$36. Winners of the prize of \$36 are excluded from further competition.

Elinore Taylor Brewer Greek Prize. The Class of 1883 has contributed the sum of five hundred dollars, the income from which is annually awarded as a prize to that member of the Sophomore Class who has done the best work in the regular Sophomore Greek Course.

Samuel Garver Latin Prize. The income from a fund of \$500 established by Rev. Austin S. Garver, A.M., a member of the Class of 1869, in memory of his father, Samuel Garver, is annually awarded to the student who has made the greatest progress in Latin during his Freshman year.

Samuel Garver Greek Prize. The income of a fund of \$500 established by Rev. Austin S. Garver, A.M., a member of the Class of 1869, in memory of his father, Samuel Garver, is annually awarded to the student who has made the greatest progress in Greek during his Freshman year.

Kuhns History Prize. Due to the generosity of Rev. Luther M. Kuhns, Litt.D., Class of 1883, an annual prize of \$25 is awarded to that member of the Senior Class who has done the best work in History.

No student shall be eligible to any honor or prize unless he has had at our own College all the work required for the year or years for which the honor or prize is awarded, unless substitutions have been approved at the time by special Faculty action.

SCHOLARSHIPS AND AIDS FOR STUDENTS.

Every student joining the college unit of the Reserve Officers' Training Corps (R. O. T. C.) receives very substantial financial benefits. As outlined in detail on page 91 every member of the R. O. T. C. receives during his college course five complete uniforms (each including also cap and shirt) valued at \$200. The cash paid direct to the student by the War Department for text-books, allowances for board, pay and traveling expenses is \$412.00. Hence the total financial benefits to each student during his college course amounts to \$612.00. As this military course, which itself is of great educational value, can be pursued without in any way interfering with the required studies in any particular course it should not only be attractive to all students but should make a very special appeal to those who are in need of financial assistance.

Endowed scholarships worth \$30 each, and a limited number of scholarships worth \$50 each, are awarded annually to deserving students by the Finance Committee of the Board of Trustees. All applications for these scholarships must be made in writing and must state in full the reasons for the request. Such applications must be handed to the President before October 1 of the college year.

Mr. and Mrs. C. J. Kirschner of Hazleton, Pa., have established a scholarship endowment fund of \$10,000 to perpetuate the memory of their son, Alvan Ray Kirschner, who lost his life in the world war. The income from this fund is divided into two scholarships which are awarded to students under certain conditions which give preference to those from Hazleton and vicinity. Applications for the use of these scholarships should be made directly to Mr. C. J. Kirschner, Hazleton, Pa.

Rev. Sydney E. Bateman, M.D., Class of 1887, has

established a scholarship fund of \$500, the income from which is awarded each year to a needy student preparing for the ministry. Applications for this scholarship must be handed to the President before October 1 of the college year.

The Parent Education Society controls eleven scholarships, worth \$30 each, which are open to young men preparing for the ministry in the Lutheran Church. Applications for the use of these scholarships should be made to the Chairman of the Scholarship Committee, Rev. J. A. Singmaster, D.D., LL.D., Gettysburg, Pa.

A scholarship of \$350 is granted annually to an advanced student who has shown special aptitude and excellence in the study of Chemistry. The money is paid thru the College by the Du Pont de Nemours Company in recognition of the splendid work done in the past by our former graduates employed by that concern. (Not awarded for 1921-22).

A number of other \$30 scholarships have been endowed and are controlled by congregations, synods, and individuals. The Gettysburg School Board controls a \$50 scholarship established by C. W. Thompson, Esq., of Lebanon, Pa. The authorizations from those controlling these scholarships must be handed to the President before Oct. 1 of the college year.

The children of clergymen are each annually awarded a scholarship amounting to one-half of the Tuition and General Fees, that is, \$75, on application to the President before Oct. 1 of the college year.

A considerable number of students earn part of their college fees by caring for class rooms and laboratories, and upperclassmen serve as student laboratory assistants. Thirty five cents an hour is allowed for these services.

Four upperclassmen are employed as proctors in the college dormitories, three serve on the Chapel Orchestra,

one cares for the Reading Room, one looks after the athletic equipment, one sends out personal news items and another athletic news to newspapers, and one serves as Assistant in the Registrar's office.

The above student appointments are made by the Faculty; applications for such positions must be in writing on a form provided for that purpose by the Registrar and must be in the hands of the President before May 1st of the preceding college year.

There are many opportunities in the town of Gettysburg for students to earn money. The college authorities will be glad to assist those who desire such outside employment. Many students skilled in the use of musical instruments earn money by playing at various functions in the town and in the College. Some of the students are granted allowances by the Athletic Council for work in the Gymnasium and on the Athletic Field. A number of students earn their board by managing student eating clubs, of which there is a large number, or by waiting on the table.

Any student wishing to engage in business or to undertake employment during term time is required to obtain permission from the President. Any violation of this rule is regarded as a misdemeanor.

TREASURER'S BILLS.

The bills of the College Treasurer are made out for each semester and include half of each item for the college year. The bill for any semester must be paid within six weeks from the opening of that semester. If not so paid, interest will be charged on all bills overdue.

No student will be graduated until all financial obligations to the College and for class publications and other student interests are settled, except when a student has registered a timely protest with the Faculty and the claim

for relief has been allowed. No credits for college work done or statement of honorable dismissal will be certified to until these financial obligations have been paid.

COLLEGE FEES.

A Registration Fee of \$5 is required of all students on entering College for the first time and is payable to the Registrar. For the regulations in regard to registration see page 20.

The annual charge for Tuition and General Fees is \$150. This charge is made for instruction; lectures; upkeep and use of grounds and buildings (does not include dormitory room rent); athletic activities (including free admission to all college athletic games played in Gettysburg); use of library, reading room, and gymnasium; health and sanitation service; debating and oratorical contests; and a free subscription to the "Gettysburgian."

An extra tuition fee of \$5 is charged for each semester hour of college work in excess of 18 per semester, or in excess of the number of semester hours required of the student if that be more than 18.

Students not candidates for a degree and pursuing undergraduate or graduate studies which total less than 16 semester hours must pay a \$15 Tuition and General Fee per course of three semester hours each semester.

In any course pursued for a Master's degree the charge for Tuition is \$75, when all the instruction has been given by members of the College Faculty. Of this \$25 is considered as a registration fee and is payable in advance, the balance being due one month previous to the date set for the conferring of the degree. Laboratory charges are extra. When the Master's degree is taken *in absentia* the total fee is \$25 payable in advance. Students in the Theological Seminary at Gettysburg may become candidates for the Master's degree by paying the regular re-

gistration fee of \$25; they are exempt from the payment of tuition exclusive of possible laboratory fees.

ANNUAL LABORATORY FEES.

Based on not more than three laboratory periods per week these are:

Biological Laboratory	\$16.00
Chemical Laboratory	20.00
Physical Laboratory	15.00
Mineralogy for the course	10.00
Botany for the course	5.00
Bacteriology for the course	15.00

In addition to the Chemical Laboratory Fee a charge is made for apparatus broken or not returned in good condition. In the Physical Laboratory an additional charge is made for material used and any damage done to apparatus.

ANNUAL ENGINEERING FEES.

Freshman year	\$10.00
Junior year	15.00
Senior year	15.00
Summer Course in Surveying	10.00

In addition to these engineering fees a charge is made for apparatus broken or not returned in good order. A charge is also made for engineering apparatus used by non-engineering students.

BOARDING.

The College does not maintain a dining hall. The students receive excellent board in clubs and with private families at a cost of from \$4.50 to \$5.75 per week.

ESTIMATED COST OF A YEAR IN COLLEGE.

The expenses of a college student depend largely on the training and habits of the individual. To aid the student rooming in a College dormitory to calculate the probable cost of a year in college at Gettysburg the following estimates are submitted:

(A). ITEMS ON COLLEGE BILL.

	Low.	Moderate.	Liberal.
Tuition and General Fees	.\$150.00	\$150.00	\$150.00
Room rent and heat (half dormitory room)	11.00	30.00	50.00
Electric light (half room) . . .	3.15	3.15	6.30
Payable to College	\$164.15	\$183.15	\$206.30

(B). OTHER EXPENSES.

Board for 35 weeks	\$157.50	\$183.75	\$201.25
Laundry*	20.00	25.00	30.00
Books and stationery†	20.00	25.00	30.00

Est'd cost for college year . \$361.65 \$416.90 \$467.55

To the above should be added laboratory or engineering fees in case the student takes courses involving such charges. Nor does it include the cost of furniture, clothing, railway fare, and other personal expenses.

COLLEGE DORMITORY ROOMS.

The following rules govern the assignment of dormi-

*By sending their laundry home each week by parcel post many students save part of this expense.

†Text-books no longer needed are sold to members of lower classes. This usually makes the net cost of this item about one-half of the amounts here given.

tory rooms in Pennsylvania Hall, Cottage Hall and McKnight Hall.

Non-resident students are required to room in the college dormitories unless excused by the Committee on Dormitory Rooms. A non-resident student rooming outside of the dormitories will be charged \$7.50 each semester for this privilege unless there are no dormitory accommodations available or for special reasons this charge is remitted by the Faculty. Not more than two students will be allowed to room in a fraternity house.

No reservations of rooms beyond the actual needs of the students are permitted. No student is allowed to change his room or to take in a roommate without permission from the Committee on Dormitory Rooms and if allowed a new rental contract must be signed.

RESERVATIONS OF ROOMS BY MEMBERS OF THE STUDENT BODY.

All rooms are declared vacant May 1 of each year. On this date the reservation of rooms for the next college year begins. Students desiring to remain in the rooms that they have been occupying have that right provided they make application and sign the rental contract at the Registrar's office before May 8. After this date all rooms not reserved in this manner are open for assignment, on the days announced by the Registrar, to the members of the several classes in the following order: Juniors, Sophomores, Freshmen. Within the respective classes the order of choice and assignment is determined by lot conducted by the Registrar.

No assignment of any room in any dormitory is made to any student except on a payment of five dollars, said payment to be applied on the rent of the room and to be forfeited in case the student fails to keep his engagement to take the room.

RESERVATIONS OF ROOMS BY NEW STUDENTS.

Rooms not reserved before May 15 will be available for assignment, in order of the applications, to new students desiring to enter College the following September. The Registrar will reserve rooms for such students by correspondence if he is informed, at least approximately, of the kind of accommodations desired and whether or not a roommate is wanted. A deposit of five dollars is required from every new student reserving a room, said deposit to be applied on the rent of the room and to be forfeited in case the student fails to keep his engagement to take the room. The rental contract involved may be signed at any time before the opening of College. Applications for such reservations should be made as early as possible both for the purpose of securing a satisfactory room and to relieve the rush at the opening in September. A key deposit of one dollar is also required.

DORMITORY ROOM FURNITURE.

All rooms are furnished by the occupants. Students graduating from College or changing from one room to another usually sell their furniture to the new occupants at a fair price mutually agreed upon. This plan is regarded highly desirable by the college authorities. The Finance Committee of the Board of Trustees has engaged a competent appraiser who has no direct interest in connection with the College to determine the value of the furniture in any room when asked to do so. When students are unable to agree on the price for the furniture in a room, this appraiser will serve as an expert to adjust the matter. Any failure to make an adjustment on the basis of the findings of the appraiser must be referred to the Committee on Dormitory Rooms for final action.

ROOM RENT.

The charge for room rent, including steam heat, is given below for each room in the above-mentioned dormitories, and covers the period commencing the Monday before College opens in September and ending the Friday after College closes in June, with the exception of the Christmas vacation. The occupants of a room pay equal parts of the rental. Not more than two students are allowed to occupy one room or suite except in the case of some of the larger suites. In Pennsylvania Hall the designations are E for east division, M for middle division, and W for west division. McK indicates McKnight Hall; C, Cottage Hall.

- \$16.00: 354C.
- \$22.00: 255, 256, C.
- \$24.00: 106, 108, W; 120, 122, 124, E; 357, 358, 360, C.
- \$26.00: 105, 107, W; 119, 121, 123, E.
- \$30.00: 353, 362, C.
- \$32.00: 103, W; 125, E.
- \$34.00: 101, W; 127, E.
- \$38.00: 340, McK.
- \$44.00: 111, 117, 118, M; 140, McK; 361-363, C.
- \$46.00: 104, 126, W.
- \$52.00: 206, 208, 306, 308, 406, 408, W; 210, 410, M; 220, 222, 224, 320, 322, 324, 420, 422, 424, E.
- \$54.00: 205, 207, 305, 307, 405, 407, W; 219, 221, 223, 319, 321, 323, 419, 421, 423, E; 335, 336, 343, 344, McK.
- \$56.00: 153, 359, C.
- \$60.00: 240, McK.
- \$62.00: 337, 338, 341, 342, McK.
- \$68.00: 204, 304, 404, W; 211, 217, M; 226, 326, 426, E.
- \$72.00: 202, 203, 302, 303, 402, 403, W; 225, 228, 325, 328, 425, 428, E.
- \$74.00: 201, 301, 401, W; 227, 327, 427, E; 157, 158, C.
- \$76.00: 233, 234, 245, 246, McK.

\$78.00: 257, 258, C.

\$80.00: 154, and suite 252-254 C.

\$88.00: 159, 160, 259, 260, C.

\$96.00: 218, 312, 318, 412, 418, M; (suites of two rooms).

\$100.00: 161, 162, C; 134, 146, McK; suite 251-253, C.

\$104.00: 133, 137, 138, 141, 142, 145, McK.

\$110.00: 411, 417, M; (suites of two rooms).

\$112.00: suites 331-333, 332-334, 345-347, 346-348, McK.

\$118.00: 242 and 244, McK; 241 and 243, McK; 235 and 237, McK; 236 and 238, McK; (suites of two rooms).

\$124.00: 261-263, 262-264, C.

Rooms 111, 117, 118, 218, 312, 318, 411, 412, 417, 418, M, include a large study and a good-sized bedroom. Odd numbers are on the south side of the building in Pennsylvania Hall and on the west side of the building in McKnight Hall.

The cost of electric light, eighteen cents per week for each 40-watt Tungsten lamp or its equivalent, is charged on the regular College bills. Any damage done to a room will be charged up against the occupants. Only the Superintendent of Buildings and Grounds is allowed to change the locks on doors. The rooms must at all times be accessible to the college authorities. The occupants of a room will be held personally responsible for the order maintained in that room. Students disregarding Faculty or Student Council Dormitory Regulations will forfeit their rights as occupants. A janitress is employed by the College to clean thoroly and set to rights every student room in the dormitories periodically; this service is without cost to the students. The Registrar will be glad to furnish any additional information that may be desired about dormitory rooms as well as rooms in the homes of families living in the town.

STUDENT PROPERTY.

The College disclaims all responsibility for the care or safety of any property belonging to students. With the exception of furniture, mattresses, tacked-down carpets and window shades, any student property left in a dormitory room during the summer vacation must be securely packed in barrels or boxes distinctly marked with the owner's name and the number of his room. No property should be left in closets or bureau drawers. This is to insure against possible loss and to facilitate the cleaning of the rooms.

MATERIAL EQUIPMENT.

LIBRARIES.

The College Library contains about 35,000 volumes, besides numerous unbound pamphlets. It is a regular depository of the United States Government and the Government of the State of Pennsylvania. Several hundred volumes of public documents are annually received from these sources.

The Library is available to all students under established regulations. During term time it is open for consultation and the drawing of books eight hours each week day, except on Saturday, when it is open for four hours. The librarian and his assistants are always ready to aid the students. The opportunities for the use of the Library are continually being increased by means of a systematic organization and the building up of a complete and attractive library of reference.

Mrs. Edwin Swift Balch, of Philadelphia, has donated \$2,000 for the establishment of the "James Macfarlane Fund, Class of 1837", the annual income from which is expended in the purchase of books on geology and kindred subjects. Mrs. Balch is the daughter of James Macfarlane and established this endowment in his Alma Mater to commemorate the centenary of his birth Sept. 2, 1819, at Gettysburg. James Macfarlane received the degrees of A.B., M.A., and Ph.D. from Gettysburg College. He was a member of the bar, an engineer, a geologist, and the author of several scientific books and many scientific articles.

In the same hall with the College Library are the Libraries of the two Literary Societies. They comprise a large number of well-selected and standard volumes,

which are annually increased thru the income of separate funds. The Philomathean Library contains at present 7,200 volumes; the Phrenakosmian Library over 7,850 volumes. These libraries are accessible to the members of the societies under their respective regulations, and are open for the issue of books on Wednesday at 4 P. M., and Saturday at 11 A. M., during term time. Several departmental libraries are also maintained.

READING ROOM.

The Reading Room is well supplied with daily and weekly papers and leading literary and scientific periodicals, thus enabling the student to become acquainted with current events and contemporary scientific, literary, and other cultural movements.

LABORATORIES.

The Biological Laboratories on the second floor of Glatfelter Hall consist of two large, well-lighted, communicating rooms. They are supplied with twenty-five fine microscopes, and all the other appliances necessary in carrying on the work of the course outlined in the Department of Biology.

The Chemical Laboratories in the Chemical Laboratory Building, as described on page 122, are amply equipped with all the conveniences and apparatus and supplies that are desirable in the requirements for general and analytical chemistry, including work in organic preparations, proximate analysis, examination of water, and other special subjects.

The Physical Laboratory. The lecture room is provided with a large table with sink, water, gas, and electrical connections; apparatus supports, blackboard, charts, and black curtains and a hand-painted screen for stereopticon work. The laboratories, comprising six

rooms for general work, besides photographic dark rooms, store room, and storage battery room, and the lecture apparatus room are equipped with modern and carefully selected apparatus for both elementary and advanced work. Alternating and direct electric current is supplied at different points by means of a central switch board, a motor generator, and a storage battery. The apparatus includes a Geryk double cylinder oil immersion air pump, high grade balances, spectrometers, photometer, and stereopticon; and in electricity, D'Arsonval galvanometers, Wheatstone bridges, potentiometer, voltmeters, standards of resistance, capacity, electro-motive force, and self-induction, ammeters and voltmeters for direct and alternating currents (all of the best make); a complete dynamo and motor set illustrating different styles of direct and alternating current machines (induction, synchronous, three-phase, etc.); an induction coil giving an 8-inch spark, high frequency coils, electric wave apparatus, and telegraph, telephone, and wireless telegraph outfits, and Kathode ray and X-ray tubes.

ENGINEERING EQUIPMENT.

The equipment in the Engineering Departments is modern and adequate and is being augmented as necessity demands.

Instruction in mechanical drawing is given in a large room in Thaddeus Stevens Hall. The department is well equipped for the purpose and is supplied with drawings illustrating the best recent practice.

The surveying equipment is adequate for the purposes of practice in all kinds of surveying. It includes, besides a number of transits and levels, a plane table, traverse board, sextant, planimeter, level and stadia rods, tapes, etc.

The facilities for materials testing include a 100,000 pound Riehle universal testing machine, with the neces-

sary measuring instruments for the determination of the physical properties of steel, cast iron, wrought iron, timber, concrete, etc. There is also a cement laboratory, with a Riehle tensile briquette machine of 1,000 pounds capacity, and a variety of other apparatus for making all the standard physical tests of cement, sand, and mortar.

The pattern shop, located in a commodious room in the basement of Glatfelter Hall, is supplied with speed lathes and an oilstone grinder, also numerous benches and hand tools, all of the most modern type. In addition there has been provided foundry equipment of an elementary nature for illustrating the fundamental principles of moulding. The College has installed a medium-sized engine lathe, a drill press, emery wheels, and numerous vises and bench tools. A portable forge with the usual collection of small tools has been added.

Thru the courtesy of manufacturers in the vicinity of Gettysburg, arrangements have been made whereby students may spend a short time as apprentices in well-equipped machine shops. By such co-operation it is hoped that the students' knowledge of manufacturing processes will be increased to a greater extent than would be possible in a course of shopwork conducted entirely in a college laboratory.

An electrical engineering laboratory has been established. There are facilities for work in both direct and alternating current phenomena. The apparatus includes several direct current motors and generators, a rotary converter, a synchronous motor, several polyphase and single phase induction motors, a number of transformers, and an assortment of direct and alternating current measuring instruments.

In connection with the College heating and pumping plant there is available for commercial testing such equipment as boilers, a gas engine, and two pumps. As necessity demands further apparatus will be added.

MUSEUM.

The Museum contains varied collections of fauna and flora and minerals, all of which are freely used in instruction. The Mineralogical Cabinet contains over 6,000 specimens, including not only very full suites of the more common and more important minerals, but also good specimens of many of the rarer minerals. The collection in Lithology numbering 3,000 specimens, and of iron in Metallurgy, have, by recent additions, become fairly representative in the most important departments of these sciences. The Botanical collection of 6,000 specimens, mainly presented by Miss Elizabeth C. Morris, of Germantown, Pa., is well arranged and contains a full representation of American Flora. A beginning has been made of a Chemical Museum—to contain specimens of raw and manufactured materials in chemical industries. Friends of our institution can greatly aid us by making additions to these collections.

BUILDINGS.

Pennsylvania Hall, erected in 1836-38, was remodeled and improved in 1889. It contains eighty-six rooms for students, many of them *en suite*, so that those who may wish to do so can have separate study and sleeping rooms. In this building are also the Reading Room and the auditorium now used by the College Y. M. C. A. The rooms are all heated by steam and lighted by electricity. Sinks with running water are located on every floor, and on the first, second, and third floors are complete lavatories with hot and cold water connected with the College system of water-works.

McKnight Hall, erected in 1897, is a dormitory building of three stories accommodating about fifty students. It is named in honor of Harvey W. McKnight, D.D., LL.D., Class of 1865, Fourth President of the College.

It is finished entirely in hard wood, is heated by steam, lighted by electricity, has hot and cold water on each floor, and lavatories in convenient places. The first floor has eight rooms with spacious closets. These rooms may be used by one or two occupants, as preferred. On the second floor all rooms are *en suite*, each suite consisting of a study with one bedroom or two. These are also provided with closets. The third floor is divided into sixteen single rooms.

Cottage Hall was built in 1868 as a double house for professors. In 1914, because of the great need for more dormitory accommodations due to the increase in the number of students, it was transformed into a College dormitory of thirty rooms. As it is very advantageously situated on the campus near the main gateway, and is fitted up with all modern conveniences; rooms in this building are among the most desirable to be had.

Glatfelter Hall, erected in 1888-89, is used for general college purposes. It is named in honor of the late P. H. Glatfelter, of Spring Grove, Pa., a former trustee, who with his family has contributed largely to the College. On the first floor are the library and reference rooms, the Registrar's office, and recitation rooms. The second floor contains five recitation rooms, the biological laboratories, and a large Social Hall. A large museum and four recitation rooms are on the third floor. In the north wing of the third floor is the hall of the Philomathean Literary Society; in the south wing the hall of the Phrenakosmian Literary Society. In the basement are the laboratories of the Department of Physics with the recitation rooms directly above. The newly-equipped Engineering Laboratory and Shops occupy the entire north wing of the basement.

Thaddeus Stevens Hall, erected 1867-68, is a three-story brick building fronting on Carlisle street. It is heated by steam and lighted by electricity, and supplied

with pure artesian water, hot and cold. On the first floor are class rooms and the R. O. T. C. armory. In 1920 this building was very materially improved, in particular the second and third floors, which were entirely remodelled into a thoroly up to date dormitory for boys attending Gettysburg Academy.

The Brua Memorial Chapel, erected in 1889-90, is the gift of the late Col. John P. Brua, U. S. A., as a memorial to his parents. This building is used for daily prayers, for Commencement exercises, lectures and other occasions requiring a large audience room.

The Chemical Laboratory is a frame building, erected in 1872 and in 1890 converted to its present use. It contains on one floor a large lecture room, an office, store-rooms, chemical-room, balance-room, and three laboratories—providing for two hundred and sixty persons working individually. The building is fitted with the most approved appliances; gas and water at each desk; there are ample hoods, a water-distilling apparatus and large sand bath, and other necessary apparatus. The balance-room contains balances set on pillars especially built for the purpose. In the basement and in the attic are store-rooms. On account of the recent large increase in the number of students an addition to the Chemical Laboratory was built in 1916.

The Astronomical Observatory, erected in 1875, is furnished with an achromatic telescope having an object glass of six and one-half inches, with a transit instrument, chronometer, and other astronomical appliances.

The Gymnasium is a substantial brick structure of two stories, with a gallery on the second or main floor. This floor is devoted to basket ball activities and to military and physical training classes. The Medical Director's office is also located here, where all physical examinations are made. The main portion of the first floor is used by the R. O. T. C. unit for the exhibition of army

equipments, military instruction and rifle practice. A dressing room is also located on this floor.

The Gymnasium is open every week day from 10 A. M. to 11 P. M., and the time is apportioned between regular class practice, general practice, and games.

The Weidensall Y. M. C. A. Building is now under construction and will be ready for occupancy during the the scholastic year 1922-1923. It is located immediately north of the Chemical Laboratory and will be built of brick, colonial style. On the first floor the two main entrances, one from the east and the other from the west, will admit to a large and attractive lobby and reception room. Here students will meet for social intercourse and may entertain visiting members of their families and friends. Adjoining these will be a Ladies' Rest Room for the accommodation of women visitors. The College Reading Room, the Recreation Room, a kitchenette, and the Y. M. C. A. Office will be located on this floor. On the second floor there will be a commodious assembly room especially designed for prayer services and other religious meetings for students as well as the Bible Study Room, the Mission Study Room, a Committee Room, and living quarters for the resident Y. M. C. A. Secretary. The chief feature of the basement will be a swimming pool 20 x 60. There will also be a locker room, a shower room, a room for the heating and filtering plant, and a room for the attendant. There will be lavatories conveniently located on each floor. The building is named in honor of Robert Weidensall, LL.D., Class of 1860, and the cost of construction has been assumed by the Woman's League of Gettysburg College.

The Boiler House supplies the steam required for heating all the College buildings.

Besides these buildings there are on the campus the President's house, four halls erected by Greek Letter Societies, and a house for janitors.

A professor's house, donated by Professor George D. Stahley, M.D., class of 1871, has been erected on College ground, corner of Carlisle and Stevens Streets.

Athletic Field. Immediately north of the College buildings is the athletic field, which is carefully graded and securely inclosed and covers an area of over seven acres. It affords room and facilities for all kinds of out-door sports. To the west of the field more than a dozen tennis courts have been laid out for the use of the students.

CLASS MEMORIALS.

As testimonials of their love for their Alma Mater and substantial tokens of gratitude for what she has done for them, the classes indicated below have donated memorials to her as follows:

Class of 1883. On the thirtieth anniversary of their graduation the members of this class donated \$500 to the College, the income from which is awarded annually, under the name of the Elinore Taylor Brewer Greek Prize, to that Sophomore who does the best work in the regular Greek class.

Class of 1893. On the twentieth anniversary of their graduation the members of this class presented the fine memorial gateway at the main entrance of the College campus. The approximate cost of this imposing and artistic structure was \$1500.

Class of 1899. On the fifteenth anniversary of their graduation the members of this class presented the furnishings of the class-room for the Department of Philosophy and Education and a departmental library for that department. This equipment, costing nearly \$600, was presented as a Class Memorial to their class-mate, the Rev. Jacob Hiram Straw, who died on the African mission field.

Class of 1902. This class presented the College a con-

crete walk extending from the entrance into McKnight Hall to the driveway in front.

Class of 1906. This class gave a concrete walk that runs across the entire front of Pennsylvania Hall connecting the various entrances.

Class of 1907. This class paid for the wiring of all the halls and rooms of Pennsylvania Hall for electric light.

Class of 1912. This class erected the handsome light post in the center of the campus, with its cluster of five large electric light globes, and put down a concrete walk extending from this central point to Pennsylvania Hall, much of the actual labor being done by the members of the class.

Class of 1913. The gift of this class was a concrete walk which extends from Pennsylvania Hall to Glatfelter Hall connecting with the Gymnasium, and widening into a plaza in front of the entrance to Glatfelter Hall, with two handsome electric lamp posts on the two outer corners of the plaza. This class also put down part of the concrete walk in front of Thaddeus Stevens Hall.

Class of 1914. This class gave a concrete walk which reaches from the main gateway to the center campus light, together with three walks extending to Brua Chapel.

Classes of 1916 and 1917. These two classes presented a concrete walk reaching from Thaddeus Stevens Hall to the corner of Carlisle and Stevens Streets. All labor of putting down this walk was done by the members of these classes.

Class of 1921. This class paid for the splendid concrete walk and steps extending from the main campus gateway to Cottage Hall.

STUDENTS' INTERESTS.

LITERARY SOCIETIES.

Two literary societies are connected with the College, the Philomathean and the Phrenakosmian. These exert a remarkably favorable influence on the intellectual and social culture of their members. The exercises consist of essays, orations, debates, and music. The acquaintance with parliamentary law and the practice in clear thought and effective speech which are here gained, make these societies excellent schools in good citizenship. Each society has a spacious hall on the third story of Glatfelter Hall, conveniently and handsomely furnished. Their sessions are held every Friday evening. Every student should become an active member in one of these societies.

DEBATES AND ORATORICAL CONTESTS.

During the year there are debates between teams representing the different classes, also between teams of the literary societies. The College is also represented in the Intercollegiate Oratorical Union, being associated with Lafayette, Franklin and Marshall, Ursinus, Muhlenberg, and Swarthmore in an annual oratorical contest.

Y. M. C. A.

The Young Men's Christian Association of the College, the second one organized in the world, is an active agent in promoting religious interests among the students. Each Sunday morning and Thursday evening a public meeting is held, addressed by invited guests or students. Various Bible and Mission Study classes are organized in college classes, fraternities, and other special groups.

The Woman's League of Gettysburg College is now conducting a campaign for the securing of \$75,000 towards the erection of a College Y. M. C. A. Hall to serve as a religious and social center for the student body. This will be ready for occupancy in September, 1922.

MUSICAL ORGANIZATIONS.

Active and well trained choral and instrumental musical organizations consisting of a band, an orchestra, a guitar and mandolin club, and a glee club, add to the pleasure of their members and of the audience at their public exhibitions. These clubs usually take a ten days' trip during the winter.

ATHLETICS.

The various college athletic sports, football, baseball, basketball, field sports and tennis, are well organized. They are recognized as an important part of college life and receive encouragement, but under such regulations as it is believed will prevent them from becoming a possible source of demoralization to the student body and from interfering with the primary work of the institution. The plan under which these sports are conducted gives the opportunity and encourages every student to take part regularly in some out-door exercise.

Students are permitted to participate in any or all branches of athletics unless parents or guardians have notified the Faculty to the contrary.

PUBLICATIONS.

THE GETTYSBURG COLLEGE BULLETIN is published by the College four times during the year.

"The Gettysburgian," under the control of the student body, is published weekly, and makes a specialty of College and alumni news.

"The Y. M. C. A. Hand-Book," issued at the opening of each college year, gives valuable information and suggestions to incoming students.

"The Spectrum," an annual publication by the Junior Class, contains pictorial representations of the College with its various organizations and surroundings, and useful information about students and alumni.

All the periodicals aim at enlarging the means of communication between the College and its graduates, former students and friends. These enterprises are cordially commended to the patronage of those interested in the welfare of the institution.

STUDENT COLLEGE REPRESENTATIVES.

A student entering Gettysburg College from another college is required to be registered as a student here for a period of one calendar year before he is permitted to take part in intercollegiate athletics.

Any student whose work, reckoned from the beginning of the semester, is reported to the Faculty at any time during the semester as being below Grade D in two or more courses, will be debarred (as long as this condition exists) from representing the College in any student organization.

ADDRESSES OF ALUMNI.

The College is anxious to keep in touch with its alumni and ex-students not graduates, and requests that all changes in address be sent to the Registrar.

TEACHERS.


The College course for teachers is arranged to meet the requirements of the School Code of Pennsylvania,

thus securing the State Life Certificate for the graduates of the College. See page 59. The attention of school boards, and others desiring teachers, is called to the fact that it is frequently in the power of the Faculty to recommend suitable candidates. Many graduates successfully fill important positions in public and private institutions. The College maintains a Bureau of Appointments for the purpose of assisting its alumni who are in the teaching profession to get in touch with vacancies. and to assist schools in finding teachers. The service is free. The Bureau tries to use its best judgment in recommending men and places adapted to each other.

The Directors of the Bureau are Professors C. F. Sanders and Frank H. Kramer.

FORM OF BEQUEST.

I give, bequeath, and devise to "Gettysburg College," in the State of Pennsylvania, and its successors and assigns forever, the sum of ——— (or shares in the bank of ———, or any other personal property or real estate, as the case may be), to be applied to the Endowment Fund of the Institution.

 A bequest to a benevolent corporation, to be legal, must be made, in Pennsylvania at least thirty days, and in New York at least sixty days, before the death of the Testator; and should be signed by two witnesses not officially related to the College.

ALUMNI ASSOCIATIONS.

The Alumni Association of Gettysburg College holds its regular annual meeting Tuesday afternoon of Commencement Week. In 1876 the Board of Trustees granted the Association the privilege of nominating six

of their number to membership in the Board, and of maintaining this number as vacancies occur.

The officers of the association are:

President:

REV. J. A. CLUTZ, D.D., LL.D., '69 ..Gettysburg, Pa.

Secretary:

REV. C. E. RICE, '11.....Neffsville, Pa.

Treasurer:

EDGAR A. CROUSE, '03Gettysburg, Pa.

The various district alumni associations are active and potential factors in promoting the interests of the College and bringing the College to the notice of prospective students.

GETTYSBURG ACADEMY.

This is a boarding school offering a four year course for students preparing for college and also a general or academic course for students who do not expect to enter college. As a training school for boys Gettysburg Academy seeks to cultivate habits of neatness and punctuality as well as industry and accuracy in study. It attaches the greatest importance to the culture of the heart and to the development of those manly virtues that make the truly Christian gentleman. The location, equipment, environment and ideals of the school are favorable for such training.

HOME LIFE.

It is the purpose of those in charge to give every student a happy, healthful home life. The Masters live in the school with the boys and are intimately associated with them both in their work and in their play. The large Living Room with its cheerful fire-place and comfortable furnishings is the gathering place of the boys when not on duty. Here is cultivated the "family spirit" of the school.

THE MAIN BUILDING.

A fine new structure known as The Main Building is now completed and occupied. This building is of beautiful, Colonial architecture and fronts one hundred and fifty-six feet on Carlisle Street. Into its construction and equipment have gone the very best and latest ideas that science, sanitation and school experience can give.

The building is heated by a vacuum steam system from the central plant and lighted thruout by electricity. The plumbing is of the most approved sanitary design.

The first floor contains large, airy class-rooms, lavatory with hot and cold water supply, shower baths and a locker-room. There are also a number of rooms for students.

The second or main floor contains the large Living Room beautifully finished in Colonial style with an ample fire-place, tiled floor and comfortable furnishings. This provides a useful and delightful center for the school life. To the south of this is the large Chapel and Study Hall. Here are held the religious exercises, the literary society meetings and certain study periods. To the north is the Dining Hall with a capacity of one hundred boarders. Here the Masters and students take their meals together. On this floor is also the modern sanitary kitchen equipped with the best devices and machinery for the preparation of food. The table is abundantly furnished with wholesome, well-cooked food fresh from the rich farming and fruit country of the vicinity. Only pasteurized milk and cream are served; only pure filtered water and manufactured ice are used. The excellence and cheapness of food supplies in Adams County make it possible to furnish a very good table at very low rates. Near the Living Room are the office of the Headmaster, the study-hall for girls who attend as day students, and a cozy reading room. The reading room is supplied with a large number of magazines and papers and is open every day for the use of the students.

The entire third floor contains rooms for the students and Masters. There are single and double rooms. On this floor there is another lavatory with hot and cold showers, drinking-font, and all modern toilet conveniences.

THADDEUS STEVENS HALL.

This building has been completely remodeled and converted into a modern dormitory. The second and third floors have been torn out and rearranged into large airy rooms, single and double, facing east and west. This building affords additional accommodations for thirty-one students and two Masters.

THE JUNIOR DORMITORY.

A lease has been secured on a large, comfortable house and grounds just across the street and opposite the Main Building. Some of the rooms are very large and will comfortably accommodate three boys. Two boys will occupy the smaller rooms. The house has two bathrooms on the second floor and a lavatory on the first floor. Two Masters will have charge of this dormitory where boys from twelve to fifteen years of age will be placed. The house is heated by an efficient hot water system and is lighted by electricity. It also has large porches, cheery rooms, and will be newly furnished for the September opening. The annual rate for each boy in this dormitory is \$440.

ADMISSION TO COLLEGES.

Gettysburg Academy is an accredited secondary school. All colleges admitting students by certificate accept its scholarship credits for entrance.

EXPENSES.

The rate for boarding students for the full school year is \$360 or \$390 or \$440 according to the size and location of the room selected. The school year is divided into two equal semesters as follows:

	Lowest Rate	Minimum Rate	Highest Rate
First Semester	\$180	\$195	\$220
Second Semester	180	195	220
	<hr/>	<hr/>	<hr/>
	\$360	\$390	\$440

The amount of each semester bill is payable in advance at the beginning of the semester. *In case of withdrawal or suspension no payment will be accepted for less than one-quarter of the fees for the school year. If the student withdraws or is suspended before the end of the first half of a semester he will receive a refund of one-half the amount he has paid for that semester.*

These charges cover tuition, board, furnished room, heat, electric light, pew rent, use of athletic field and tennis courts, gymnasium, library, reading room, athletic fees, and swimming pool. The money received from the athletic fees (\$8 for each boarding student) is administered by a committee composed of faculty and student members for the benefit of the athletic interests of the school.

The Academy catalog containing cuts of the buildings and detailed information will be mailed upon request to

THE HEADMASTER OF GETTYSBURG ACADEMY,
Gettysburg, Pa.

STUDENTS IN COLLEGE 1921-1922

GRADUATE STUDENTS.

Non-resident.

Baker, Minerva Taughinbaugh	Confluence
Belknap, Carlisle Parks	Jamestown, N. Y.
Bowers, Ross Eldon	Cortland, N. Y.
Bowman, Earl Jerome	Steeltown
Frommhagen, Frederick Carl	Moundsville, W. Va.
Holman, Edward Lee,	Blain
Lamont, Bruce Floyd	Hazleton
Lauver, Marie Nayetta	Altoona
Lauver, William Wieand	Altoona
Peeling, James Hedley	Nazareth
Renninger, Joseph D.	Harrisburg
Rudisill, Harold Becker	Hanover
Yagle, Jay Arthur	York
Zeiders, Ruth Viola	York

Resident.

Albig, John William	McKeesport
Buedinger, William Anton	Jersey City, N. J.
Coble, Arthur Dewey	Williamson
Dulebohn, George Roscoe	Mason-Dixon
Falkenstein, Elwood S.	York
Geiger, Charles David	Lebanon
Keller, Lloyd Monroe	Shrewsberry
Klett, Guy S.	Gettysburg
Klingaman, Foster Ellis	Gettysburg
Lerew, Joseph Austin	Gettysburg
Lovell, John Roy	Gettysburg
Miller, Harman Frederick	Somerset
Myers, George Israel	Seven Valleys
Neal, Clarence Arthur	Waynesboro
Putman, Dwight Frederick	Somerset
Ryder, Charles Franklin	Chambersburg
Shaulis, Samuel Sylvester	Somerset
Sheads, Robert Emory	Gettysburg
Sheffer, John Allen	Spring Grove
Shumaker, Stella Barton	Gettysburg
Wood, William Wallace	Arendtsville
Woodward, Luther Ellis	Walnut
Ziegler, Earl Emerson	Gettysburg

SENIOR CLASS.

Class of 1922.

Candidates for the Degree of Bachelor of Arts.

P indicates Pennsylvania Hall; M McKnight Hall; C Cottage Hall

Group

Bower, Philip	1 Table Rock	318 P
Dimpsey, Frank James	2 New Freedom	Hoffman House
Doub, John Wilfred	2 Middletown, Md.	256 C
Floto, Norwood Shipley	3 Connellsville	341 M
Foulk, Paul Levi	1 Littlestown	358 C
Fuhrman, Arthur Alphas	1 Hanover	18 Chambersburg St.
Gotwald, David Etter Small	1 York	262 C
Guss, Walter Dimm	1 Philadelphia	401 P
Keck, George Harold	1 West Newton	218 P
King, Paul Edward	1 Littlestown	318 P
Lawyer, Paul Ezra	2 Westminster, Md.	218 P
Linn, Hubert Miller	1 Rockwell, N. C.	211 P
Medsgger, Ralph Hayden	2 Scottdale	106 P
Mertz, Walter Louis	3 Baltimore, Md.	Hoffman House
Minich, William Gordon	3 Loysville	421 P
Nagele, Carl Robert	1 Conshohocken	418 P
Rice, Rueil Keedy Greitzner	3 Seven Stars	233 M
Saas, William Herman	1 East Clarksburg, W. Va.	240 M
Saylor, Howard Melvin	3 Johnstown	Druid House
Spangler, Ruth Anna	2 Gettysburg	18 Chambersburg St.
Taylor, Miriam Daisy	2 Gettysburg	501 W. Middle St.
Weaver, Constance Cornelia	2 Gettysburg	66 W. High St.
Wertman, Roscoe Edwin	2 Bloomsburg	427 P
Willard, Pierce Main	1 Frederick, Md.	327 P
Wolf, Ruth Sheely	2 Westminster, Md.	27 Stevens St.

Candidates for the Degree of Bachelor of Science.

Baker, Michael Daniel	4 Waynesboro	261 C
Brenneman, John	4 York	161 C
Burgess, Milton Valentine	5 Crafton	320 P
Daugherty, Frank Luther	6 Butler	134 M
Davis, Donald Glen	10 Newberry	221 P
Derr, George Harry	6 Lairdsville	333 M
Dollman, Warren Andrew	5 Eyer's Grove	126 P
Gentzler, Jennings Mason	4 York New Salem	206 P
Gilbert, Paul Steck	5 Potts Grove	A. T. O. House
Gingerich, Lester Earl	7 York	127 P
Hege, Frank Bushey	6 Williamson	123 N. Washington St.
Hersh, Henry McClellan	6 New Oxford	333 M
Jensen, Jacob Roed	5 Aalborg, Denmark	119 P
Keiser, Leon Paul	6 Mifflintown	236 M
Krebs, William Albert	9 Hanover	124 P
Kyle, James William, Jr.	6 Mifflintown	235 M
Leavy, John Peter	7 Harrisburg	312 P

Mathias, Robert Burns	5	Mt. Washington, Md.	203	P
McBride, Henry Ellsworth	4	Brunswick, Md.	328	P
McDonnell, John Henry	7	Gettysburg	140	W. Middle St.
McGaughy, John Alexander	9	Gettysburg		R. D. 4
Mumma, Elsie ✓	6	Hummelstown	116	Broadway
Olinger, Paul Francis	10	Hanover	121	P
Overmiller, Howard Andrew	6	Spring Grove	312	P
Oyler, Robert Monroe	5	Gettysburg	218	York St.
Panebaker, David Edward	4	Hanover	318	P
Pegg, Edwin Larue	4	New Providence, N. J.	405	P
Phillips, Samuel Ellenberger	5	Harrisburg	234	M
Reller, Louis Smith	5	Pittsburgh	342	M
Ruder, Carl Letsig	5	Union City		S. A. E. House
Rudisill, Donald Everett	7	Altoona	427	P
Ryder, Charles Franklin	4	Chambersburg	402	P
Sahm, Russell Luther	7	Mahaffey	425	P
Smith, Roger Barrick	4	Frederick, Md.	428	P
Spangler, George William	6	Harrisburg		S. A. E. House
Waltz, George Frederick	6	West Chester	419	P
Weaver, Leonard Ray	10	Pottsgrove	405	P
Winebrenner, Leroy Hartzel	9	Gettysburg	783	Baltimore St.
Wolfe, Edgar Leroy	10	Dillsburg	301	P
				Seniors 64

JUNIOR CLASS.

Class of 1923

Candidates for the Degree of Bachelor of Arts.

Group

Bartow, Hazel Kathryn	2	Punxsutawney	159	N. Wash. St.
Buller, Edward Bard	3	Maytown	326	P
Diehl, William Clarence	1	Clear Spring, Md.	228	P
Erhard, Wm. Melanchthon	1	Juniata	318	P
Eshenour, Theodore Wilbur	1	Harrisburg	242	M
Fasold, Charlotte Kathryn	2	Pillow	113	Broadway
Geiselman, Robert Clare	1	Gettysburg	122	P
Geiser, Dixon Hoover	3	Pen-Mar	120	P
Hafer, Merle Bowers	1	Chambersburg	402	P
Hesser, Harvey Allan	2	Pine Grove	418	P
Horne, Irwin Apple	2	Quakertown	107	P
Kadel, Emma Susan ✓	2	Gettysburg	415	W. Middle St.
McAllister, Walter Ginder	2	Manheim	302	P
Naus, Alford Raymond	1	Berwick	202	P
Redcay, Mark Snoddy	1	Hanover	324	P
Rings, William Refus	1	Amlin, Ohio	48	Chambersburg St.
Robinson, Ralph Carleton	1	Gettysburg	46	South St.
Roth, Lorene Marian ✓	2	Gettysburg		Broadway
Schoffstall, Emanuel Martz	3	Tower City	252	C
Sebold, Charles Earl	1	Dayton, Ohio	304	P
Simon, Carl Robert	1	Hagerstown, Md.	227	P
Stueber, Frederick	1	Pittsburgh	420	P
Trauger, Wilmer Kohl	2	Ferndale	108	P
Tucker, Edith Medora ✓	2	Bayonne, N. J.	116	Carlisle St.
Wall, Fred Brice	3	Gettysburg	114	Chambersburg St.
Webner, Harvey Walter	1	Harrisburg	118	P
Wolfe, Charles Robert	2	Bloomsburg	224	P
Zerbe, Calvin Lee	2	Pine Grove		317 Academy

Candidates for the Degree of Bachelor of Science.

Altland, Noah Laveré	10	York	335	M
Beckmeyer, David Edward	4	York	403	P
Bixler, Edgar Henry	4	Hanover	360	C
Briggs, Harold David	10	Johnstown, N. Y.	245	M
Brininger, Robert Gilchrist	4	Harrisburg	244	M
Buehler, Guyon Edwards	4	Gettysburg	249	Carlisle St.
Dahmen, Carl Lloyd	6	Jamestown, N. Y.	226	P
Diehl, William Harold	4	Rockport, Ind.	258	C
Geiselman, Ralph Alden	10	Hanover	122	P
Gilliland, James Patterson	6	Gettysburg	239	Carlisle St.
Glenn, James Donald	5	Fairfield	147	Chambersburg St.
Gundel, Walter Peter	4	Columbia	423	P
Haehnlen, Frederick Philip	4	Harrisburg	235	M
Hill, Walter Henry	5	Hughesville	211	P
Hinman, Elmer Stephen	4	Westville, Conn.	133	M
Howard, Charles Harold	6	Gettysburg	46	E. Middle St.
Hughes, Charles Glenwood	6	West Chester	419	P
Kressler, Clemuel L.	6	Bloomsburg	220	P
MacInnes, James Allan	9	Greensburg	138	M
Mahaffie, Ralph	4	Renovo	A. T. O.	House
McDowell, James Waddell	6	Butler	255	C
Matsushita, James Shin	10	Tokio, Japan	337	M
Meckley, Herbert Wertz	6	Hanover	220	P
Mertz, Harry LeRoy	10	Baltimore, Md.	205	P
Miller, Charles Douglas	6	Pottsville	S. A. E.	House
Moul, Clayton Edward	4	Menges Mills	204	P
Ott, Minter Morrell	5	Johnstown	302	P
Page, Wayne Reyner	4	Clarion	422	P
Ports, Earl George	10	Hanover	412	P
Ridder, John Edward	4	Gorman, W. Va.	335	M
Ross, Frederick Uhler	6	Harrisburg	162	C
Sheely, William Clarence	6	Gettysburg	143	Springs Ave.
Shelley, Paul Webster	5	Mechanicsburg	407	P
Shetter, Glenwood Benjamin	6	Gettysburg	204	P
Shue, Norman Elwood	4	Glenville	343	M
Sloat, Charles Allen	4	Orrtanna	115	Buford Ave.
Smith, Richard Manges	5	York	411	P
Smith, Theodore Paul	4	Bloomsburg	222	P
Snader, John Milton	4	Connellsville	126	P
Snyder, Franklin Lloyd	4	Martinsburg	412	P
Sowers, Lowell Martin	4	Clearspring, Md.	107	P
Stoner, Clarence Emmanuel	10	Gettysburg	129	Baltimore St.
Stover, Ralph Hays	6	Gettysburg	114	W. High St.
Toms, Oscar Ray	6	Boonsboro, Md.	363	C
Uhler, Romaine Thompson	6	Lionville	428	P
Walter, Luther Brooke	7	Reading	417	P
Winslow, Rosalie	6	Dayton	310	N. Stratton St.
Wise, Richard John	4	Hanover	125	P
Wolf, Spurgeon Louis	9	Reisterstown, Md.	203	P
Woods, David Walker, Jr.	9	Gettysburg	R D 4	

Juniors 78

SOPHOMORE CLASS.

Class of 1924.

Candidates for the Degree of Bachelor of Arts.

Group		
Alleman, Benson Suesserott	3 Gettysburg	7 Seminary Ave.
Bush, Horace Edgar	1 Lemoyne	340 M
Carlson, Harry Ludwig	1 McKeesport	131 N. Wash. St.
Clare, Richard Henry	2 Gettysburg	243 York St.
Congleton, Vernon Jerome	1 Baltimore. Md.	257 C
Doub, Donald Joseph	3 Middletown. Md.	258 C
Fink, William Conley	2 Emigsville	345 M
Fosnocht, Henry Allison	3 Joanna	241 M
Gohn, Herman Franklin	1 Harrisburg	359 C
Grimm, Emma Hermine Louise	2 Gettysburg	228 Carlisle St.
Hamsher, Reuben Harold	1 Fayetteville	31 W. Water St.
Hansen, Christian Max	1 Media	403 P
Laird, George Densmore	1 Trenton, N. J.	48 E. Stevens St.
Leese, Charles	3 Spring Grove	141 M
Menges, David Alvin	1 Menges Mills	359 C
Miller, Leon Clare	1 York	411 P
Mogel, Charles Luther	1 Newport	260 C
Morecraft, Edward Isaac	1 Bayonne, N. J.	223 P
Reaser, Catherine Grace	2 Gettysburg	Hanover St.
Reinartz, Frederick Eppling	1 East Liverpool, O.	223 P
Senft, Cletus Arthur	1 York	417 P
Shearer, Francis Allen	1 York Haven	426 P
Smith, George Wellington	1 Mifflintown	104 P
Smith, Jessie May	2 York	Broadway
Stavely, Lloyd Luther	1 Littlestown	318 P
Waybright, Walter Ernest	1 Gettysburg	135 Water St.
Weaver, Lillian Augusta	2 Gettysburg	66 W. High St.
Weikert, Treva Justine	2 Gettysburg	224 Steinwehr Ave.
Yost, Hugh Eugene	1 York	Druid House

Candidates for the Degree of Bachelor of Science.

Albright, Curtis Miller	4 Brodbeck	119 P
Bailey, John William	6 South Fork	418 P
Bamberger, Russell Elwood	4 York Haven	426 P
Barbehenn, Mary Elizabeth	6 Gettysburg	218 N. Stratton St.
Baum, Carl Albert	6 Lemoyne	305 P
Beers, Franklin Wayne	4 Indiana	357 C
Bender, Horace Lehr	6 Hanover	137 C
Bentley, Rolland Peters	6 Camp Hill	201 P
Blose, Ben Wade	6 Greensburg	241 M
Borland, James Ira	5 Indiana	327 P
Boyer, Robert William	5 Lykens	401 P
Bream, Henry Trostle	6 Gettysburg	Broadway
Brockley, Charles Robert	10 Chambersburg	360 C
Carruthers, Fred Alton	6 Mt. Union	328 P
Clarke, Grace Dorothy	5 Baltimore, Md.	336 Baltimore St.

Clutz, John Jacob	7 Gettysburg	159 Broadway
Collinge, Gilbert	7 Jersey City, N. J.	334 M
Deardorff, Charles Robert	9 Gettysburg	118 Carlisle St.
Drury, Joseph Donahue	7 New Haven, Conn.	259 C
Feldman, Edward Henry	7 York	424 P
Gehr, John Shockey	9 Waynesboro	259 C
Gilbert, Calvin Rex	10 Gettysburg	40 Hanover St.
Graybill, Harry LaVerne	4 Mt. Wolf	345 M
Grimm, Henry Jacob	6 Harrisburg	312 P
Grothe, Ernest Fred. Henry	9 York	118 P
Haar, Amy Rosetta ✓	4 New Oxford	27 Water St.
Haar, Eva Cornelia ✓	4 New Oxford	27 Water St.
Hartley, Robert Clinton	6 Gettysburg	301 Carlisle St.
Hartzell, James Hamilton	6 York	38 W. Water St.
Heindel, Norman Hadley	4 Gettysburg	218 Carlisle St.
Ketner, Ruth Siess ✓	5 Ellenville, N. Y.	Broadway
Lee, Elten Russell	10 Everett	118 P
Lehman, Paul Edgar	4 Fayetteville	225 P
Livengood, Howard Lester	4 Birdsboro	241 M
Long, Frank Harvey Luther	4 Wormleysburg	160 C
MacMillan, Allen Gardner	9 Dunmore	153 C
McKenzie, Stewart George	4 Fayetteville	225 P
Mickel, Harry Fries	9 Bridgeton, N. J.	
Morris, Robert Means	6 Gettysburg	310 N. Stratton St.
Moyer, Grace Lillian ✓	5 Palmerton	159 N. Wash. St.
Munshower, Carl Wallace	7 Norristown	69 Stevens St.
Overcash, Chalice Seth	4 Shadygrove	127 N. Wash. St.
Pfeffer, Beatrice Otelia ✓	5 Gettysburg	R. D. 3
Phillips, Leon Altmiller	9 Hazleton	104 P
Reese, George Edmund	4 Hanover	210 P
Richter, Lewis Herman	9 West Haven, Conn.	
Riis, Laurence Johannus J.	5 Poughkeepsie, N. Y.	345 M
Rosser, Everett Alfred	6 Dunmore	153 C
Roth, Harold Shearer	5 Gettysburg	Broadway
Saul, William John	4 Pine Grove	321 P
Schantz, Bradford Torrey	4 Schaefferstown	308 P
Shambach, Franklin M.	6 Baltimore, Md.	312 N. Stratton St.
Shearer, Harold Theodore	10 York Haven	234 M
Sheely, Harry Ross	6 Gettysburg	27 East Stevens St.
Slaybaugh, Carl Ephraim	7 Biglerville	Biglerville
Smith, Fred Hughes	10 Pine Grove	408 P
Stallsmith, Ruth Virginia ✓	6 Gettysburg	Broadway
Stauffer, Harry Groff	5 Spring Grove	237 M
Thrush, George Herbert, Jr.	10 Shippensburg	307 P
Trumbore, Arthur Frederick	10 Pennsburg	304 P
Watt, William Gates	9 Kittanning	137 M
Weeks, Newton Spangler	4 Renovo	154 C
Weiser, Donald Koehler	7 Gettysburg	300 N. Stratton St.
Wharton, Bruce Graham	4 Renovo	154 C
Wible, Mark Clyde	7 Gettysburg	R. D. 4
Wolff, Robert Miller	4 Hanover	210 P
Wright, Wm. Albert Earl	4 Harrisburg	19 W. High St.
Yost, Carleton Henry	4 Coatesville	117 P

Sophomores 97

FRESHMAN CLASS.

Class of 1925

Candidates for the Degree of Bachelor of Arts.

Group

Aungst, Spencer Wenrich	1	Harrisburg	303 P
Baker, Bertha Helen ✓	2	Abbottstown	Abbottstown
Balthaser, William Arthur	3	Pine Grove	254 C
Baublitz, Earl Raymond	1	York	70 E. Stevens St.
Beisecker, Bernard Leroy	1	Ellwood City	417 P
Bell, Martha King ✓	2	Gettysburg	223 E. Middle St.
Borleis, Harry Frederick	1	Baltimore, Md.	321 P
Borleis, John Henry August	1	Baltimore, Md.	321 P
Bream, Anna Mary ✓	2	Gettysburg	102 E. Middle St.
Bucher, Margaret Helen ✓	2	Biglerville	144 E. Middle St.
Casper, William Columbus	2	Pittsburgh	138 Broadway
Curran, George Jacob	1	Felton	257 C
Diehl, Madeline Weaner ✓	2	Gettysburg	47 Hanover St.
Dise, Helen Louise	2	Sea Isle City, N.J.	161 N. Wash St.
Dougherty, Louise Cornelia ✓	2	Gettysburg	66 W. High St.
Durborow, Esther Marie ✓	2	Narberth	113 Broadway
Ehrhart, Kenneth Strine	1	Brodbecks	111 P
Evans, Luther Weltmer	1	Annaville	306 P
Greenholt, Reginald Homer	1	Hanover	302 N. Stratton St.
Handschumacher, Albert W	1	Philadelphia	406 P
Hesse, Florence Catherine ✓	2	Smithsburg, Md.	113 Broadway
Joseph, Loy Edward	2	York New Salem	118 P
Kerner, Carl William Fred.	1	Bayonne, N. J.	138 Broadway
Kroh, Millard Leo	1	Glen Rock	322 P
Kuhns, Logan Luther	1	Apollo	228 Chambersburg St.
McCullough, Sara Eileen ✓	2	Gettysburg	212 E. Middle St.
Melhorn, George Ira	1	Hanover	125 N. Washington St.
Menges, Elmer Lerew	2	Bermudian	336 M
Miller, Mary Elizabeth ✓	2	Aspers	135 York St.
Moyer, Helen Amanda ✓	2	Palmerton	159 N. Washington St.
Peeling, Albert Stanley	3	York	120 P
Ports, Horace Gonder	3	Hanover	412 P
Raffensperger, Myrna E. ✓	2	Gettysburg	R. D. 10
Rohrbaugh, Raymond Edgar	3	Glenville	111 P
Roth, Madylin Roberta ✓	2	Gettysburg	Broadway
Scott, Ruth Katherine	2	Bendersville	783 Baltimore St.
Sheads, Ruth Sara ✓	2	Gettysburg	115 N. Stratton St.
Shimer, Frank Herbert	1	Schenectady, N. Y.	138 Broadway
Simon, Philip Barnitz	1	Fairlawn, Ohio	227 P
Stiles, Austin Edward	1	Dallastown	363 C
Troutman, Raymond D.	3	Womelsdorf	308 P
Trout, Paul Josiah	1	Pittsburgh	48 E. Stevens St.
Walker, Paul Hartman	2	Lewisberry	156 C
Weaver, Thomas Erdman	1	Macungie	238 M
Zeigler, William Edward	1	York	70 E. Stevens St.
Zimmerman, Minnie Ellen	2	Punxsutawney	59 York St.

Candidates for the Degree of Bachelor of Science.

Adams, Frank William	4	Vandergrift	216	Chambersburg St.
Allison, Ethel Grace ✓	4	Fairfield	314	N. Stratton St.
Allison, Mary Margaret ✓	4	Fairfield	314	N. Stratton St.
Allshouse, William Kenneth	4	Greensburg	138	Broadway
Alter, John Snyder	4	Connellsville	233	E. Middle St.
Althouse, Robert Girvin	4	Coatesville		117 P
Armor, Brady Sefton	6	Gettysburg	105	E. Middle St.
Armor, Horace Francis	6	Gettysburg	105	E. Middle St.
Baer, George Charles	10	Meyersdale		
Barbour, Lester Kenneth	4	Chambersburg		346 M
Barnes, John Luther	9	Hagerstown, Md.		301 P
Basehore, Samuel Augustus	6	Mechanicsburg	127	N. Wash. St
Benedict, James Glenn	6	Quincy	218	W. Middle St.
Berkey, Harry Law	9	Marion Center	218	M. Middle St.
Bertolet, Nathan Evans	10	Glen Moore		117 P
Birely, Morris Franklin	4	Thurmont, Md.		334 M
Boucher, Scott Walker	7	Rockwood		410 P
Bowman, Charles Edward	7	Canton, Ohio		319 P
Boyles, Robert Clay	4	Westernport, Md.	38	Water St.
Bream, Walter Robert	7	Gettysburg	4	Confederate Ave.
Brenneman, William Joshua	9	Huntingdon		226 P
Brininger, Ellsworth Hoover	6	Harrisburg		244 M
Brown, John Benjamin	6	Renovo		154 C
Burger, Keith	6	Gettysburg		146 M
Buzard, Charles Franklin	7	Vandergrift	216	Chambersburg St.
Campbell, Clarence E. W.	6	Conshohocken		218 P
Cashman, William Wolf	6	New Oxford		360 C
Chambers, Durward Paul	9	Esperance, N. Y.	218	W. Middle St.
Cribbs, Harry Milton	6	Vandergrift	216	Chambersburg St.
Crist, Homer William	4	York New Salem		404 P
Cump, Guy	6	Chambersburg	314	N. Stratton St.
Decker, Parke	9	Nicholson		123 P
Doehne, George Vaughn	9	Harrisburg		262 C
Doran, Russell Philip	4	Meriden, Conn.		241 M
Durborow, Ruth Shindle	6	Narberth	113	Broadway
Elliott, Hamilton Young	9	Everett		111 P
Ely, Henry Nevins	6	Red Bank, N. J.		162 C
Emanuel, Edward Francis	6	Harrisburg		142 M
Fahey, Charles Augustus	6	Bellows Falls, Vt.		312 P
Feltz, Thomas	5	Wilmington, Del.		334 M
Fisher, Lee Reeser	6	Reading		417 P
Fleming, Ned McCamant	7	Chambersburg		260 C
Flemming, Harry Willard	9	Gettysburg	46	Stevens St.
Frederick, Robert Irvine	10	Carlisle	19	W. High St.
Fritz, William Dale	4	Meyersdale		159 C
Frock, Jerome Wayne	7	Harrisburg		Hanover St.
Gantz, Frank Birdsall	4	Lancaster		133 M
Garman, Ray Kimmel	6	Lemoyne		305 M
Geisz, Henry Frederick	7	Baltimore, Md.		257 C
Gentzler, Waldo Emerson	4	York	70	E. Stevens St.
Gilbert, David McConaughy	6	Camp Hill		407 P

Gingerich, Spurgeon Wilbert	4	York	127	P
Gliem, Theodore William	8	Hazleton	234	M
Gross, Clarence E.	7	York	70 E. Stevens St.	
Gumbert, John Milton	4	Berlin	338	M
Haberlin, Roy Calvin	4	Latrobe	258	C
Hafer, George Horace	4	Abbottstown	220	P
Hamme, Richard James	10	Camp Hill	312 N. Stratton St.	
Hanner, Henry Newton	7	Montoursville		
Hartman, John Edward	7	Pittsburgh	420	P
Heindel, Clair Rohrbaugh	6	Seven Valleys	322	P
Henneberger, Melvin Buck	9	Waynesboro	71 E. Stevens St.	
Henry, Ted Robert	6	Vandergrift	216 Chambersburg St.	
Hoffman, Wilbert Horner	4	Johnstown	64 W. Middle St.	
Hummelbaugh, Katharine ✓	6	Gettysburg	28 High St.	
Hunter, George William	6	Gettysburg	127 W. High St.	
Ibberson, Glenn Lowell	6	Philipsburg	309 N. Stratton St.	
Jarboe, Joseph Clark	5	Gettysburg	218 Baltimore St.	
Johnson, Carl Bennett	4	Jamestown, N. Y.	406	P
Kauffman, George Franklin	10	York	219	P
King, Charles Frederick	8	Baltimore, Md.	208	P
Kitzmiller, William Ray	7	Gettysburg	Baltimore St.	
Koontz, John George	4	Johnstown	64 W. Middle St.	
Krieg, Daniel Bering	9	Harrisburg	138	M
Leister, Walter Baker	10	Gettysburg	R. D. 1	
Lingle, Earl William	10	Harrisburg	410	P
Lower, Donald Eppleman	4	Aspers	318	P
Markley, Franklin Henry	9	York	161	C
McDaniel, Joseph Wilson	10	Thurmont, Md.	127 N. Wash. St.	
McGoogan, William John	5	Scottdale	312 N. Stratton St.	
Metz, Edith Frederica ✓	4	Ashland	70 E. Stevens St.	
Miles, Ronald Glenn	7	Portage	425	P
Moyer, Sarah Elizabeth ✓	4	Harrisburg	70 E. Stevens St.	
Musselman, John Henry	6	Fairfield	Fairfield	
Myers, Hayden William	4	York		
Newell, Paul Mahood	4	Vandergrift	127 N. Wash. St.	
Olander, Carl David	7	Philadelphia	324	P
O'Leary, James Pierce	6	Harrisburg	354	C
Overmiller, Clair Marcellus	4	Hanover	125 N. Wash. St.	
Overmiller, Roy Allen	4	East Prospect	312	P
Peters, James Grayson	7	Gettysburg	270 Baltimore St.	
Ray, William Stanley	6	Harrisburg	302 N. Stratton St.	
Reeser, Frederick Harold	6	Watsonstown	338	M
Rehmeyer, Clyde Seaks	6	Stewartstown	202 Cham. St.	
Reiter, Edward Richard	6	Berwick	157	C
Rodgers, Charles Frederick	5	Johnstown		
Rohrbaugh, Marl Amos	6	Glen Rock	343	M
Ryall, Thomas Milton	6	Pittsburgh	115 Springs Ave.	
Ryder, Robert Huston	10	York	403	P
Saylor, Joseph Wiley	4	Dallastown	312 N. Stratton St.	
Scharf, Henry Murray	6	Gettysburg	Hotel Gettysburg	
Schmitt, Edward Francis	10	Lava, N. Y.	125 N. Wash. St.	
Schneck, Slater Samuel	10	Pine Grove	160	C
Schubauer, Robert George	7	Harrisburg	137	M
Shader, Ralph Foster	4	Harrisburg	23 E. Water St.	

Sheets, Howard Franklin	9	Aspinwall	145	M
Shipley, John Thomas	5	Meyersdale	159	C
Siciliano, Santo	6	Harrisburg	202	E. Middle St.
Slaughter, Frank Ellis	4	Tarentum	251	C
Smeltz, George Edwin	7	Wiconisco	48	E. Stevens St.
Smith, Alton Newlin	6	Harrisburg	23	E. Water St.
Smith, Charles Ray	10	York	64	W. Middle St.
Smith, Wilmer Carl	4	York	353	C
Stup, Harry Cornelius	4	Trenton, N. J.	218	P
Swartz, Wilbur Hartman	6	Gettysburg	32	E. Middle St.
Tedrow, Frank Warren	10	Rockwood	71	Stevens St.
Thompson, Kenneth Paul	6	Vandergrift	216	Chambersburg St.
Tracey, Charles Omar	9	Blue Ridge Summit	259	C
Umberger, Ross Eugene	10	Oakland, Md.	319	P
Viener, Benjamin	6	Gettysburg	217	N. Stratton St.
Walthour, William Earnest	6	Greensburg	137	E. Middle St.
Weidner, Frederick Piersol	4	Reading	38	Water St.
Williamson, Stephen Girard	6	Lock Haven	157	C
Wink, Howard Lamar	10	Manchester, Md.	423	P
Wismer, Roland Detwiler	6	Norristown	218	W. Middle St.
Wisotzkey, Harry Albert	6	York		W. Water St.
Wren, George Granville	6	Steelton	231	Hanover St.
Wren, Kasper Donald	6	Steelton	245	M
Yarnall, Charles Wellington	7	Mt. Carmel	146	M
Yaw, Joseph Ernest	4	Connellsville	233	E. Middle St.
				Freshmen, 176

STUDENTS NOT CANDIDATES FOR A DEGREE.

Albert, Porter De Russey	Du Bois	226	P
Banks, John Anthony	Dunmore	123	P
Beagle, Taylor McKinley	Berwick	202	P
Belknap, Harold Porter	Jamestown, N. Y.	261	C
Bentz, Michael John	Lebanon	336	M
Bigham, Elizabeth Jane	Gettysburg	R. D. 3	
Brenholtz, Walter Metzger	Williamsport	325	P
Britsch, Charles William P.	Harrisburg	207	P
Buccieri, Sam Frank	Steelton	16	W. Middle St.
Cunjak, Frank John	Steelton	202	E. Middle St.
De Vito, Michael Joseph	Hartford, Conn	19	W. High St.
Ellis, Leon Guy	Uniontown	450	W. Middle St.
Englehart, Charles Clayton	Accident, Md.	340	M
Fisher, Luther Irvin	Waynesboro	261	C
Flory, George Edward	York	325	P
Foster, William Abram	Mapleton Depot	19	W. High St.
Francis, Robert Milton	Waynesboro	145	M
Hamme, Roy Wilfred	Brodbecks	111	P
Hereter, MaBelle	Gettysburg	R. D. 4	
Hoenstine, Roland Luther	York	219	P
Hollinger, Charles Raymond	Gettysburg	225	W. Lincoln St.
Hutchison, Hugh Gallagher	Kittanning	134	M
Iannantuoni, Adolph Joseph	Waterbury, Conn.	64	W. Middle St.

Kanda, Takeo	Wailuku, Hawaii	337 M
Kepner, Katherine D.	Royersford 60 Chambersburg St.	
Lafferty, John Pentz	Altoona	346 M
Martin, Rudolph David	Nanticoke	246 M
Mazzara, Antonio Vincenzo	Brooklyn, N. Y.	19 W. High St.
Mellin, Carl Theodore	Philipsburg	W. Water St.
Merva, Andred Joseph	Nanticoke	246 M
Millard, Joseph Delcamp	Mt. Carmel	146 M
Minnich, Mary Susan	Dallastown	418 Carlisle St.
Mordan, George	Bloomsburg	224 P
Myers, Elwood Swartz	New Oxford	New Oxford
Myers, Philip Trone	Westminster, Md.	233 M
Phillips, Nelson Miles	Mt. Carmel	
Plowman, Walter Schmucker	Hanover	333 M
Rankin, Charles Albert	West Chester	105 E. Middle St.
Rankin, Ethel Hoopes	West Chester	105 E. Middle St.
Romesberg, Earl Clinton	Rockwood	48 E. Stevens St.
Ryngawa, Peter Edward	Glen Lyon	202 E. Middle St.
Scattergood, Joseph	West Chester	302 N. Stratton St.
Schaeffer, Charles Franklin	Allentown	123 Buford Ave.
Schildnecht, Page Milburn	Hagerstown, Md.	158 C
Strine, Howard Hamilton	Gettysburg	R. D. 7
Swanson, Spence William	Galesburg, Ill.	338 M
Toot, Evelyn Mae	Gettysburg	452 Baltimore St.
Vanore, Alphonse Alfred	Brooklyn, N. Y.	19 W. High St.
Weigel, Harry Milton	Harrisburg	344 M
Widing, Herbert Andrew	Philadelphia	417 P
Winebrenner, George Clare	Gettysburg	449 Baltimore St.
Wolf, John Henry	Westminster, Md.	253 C
Wolski, Clement Edward	Nanticoke	117 P
		Special 53

STUDENTS IN THE ACADEMY.

SENIOR CLASS

Agnew, Raymond Edward	Fernwood
Armstrong, Thomas Theodore	Sewell, Md.
Asper, Maybelle	Aspers
Baker, Anne Gitt	Abbottstown
Baker, Ernest Wilson	Bakersville
Barclay, Kenneth Bradley	Sinnamahoning
Doyle, Raymond Edgar	Portage
Englehart, Howard Melvin	Accident, Md.
Filbert, Frederic Quail	Auburn
Greenwood, Norman Bramley	Philadelphia
Hall, Marshall	Pine Grove
Hasenfuss, Gustav, Jr.	Philadelphia
Hoffman, Benjamin Franklin	Williamsport, Md.
Hutchison, Philip Greenfield	Kittanning
Karnak, Charles Anderson	Johnstown
Keller, Paul Joseph	Oberlin
Kershner, Alan Motter	Bellevue
King, Owen Hess	Sagamore
Klingler, Charles David	Pittsburgh
Kloss, Richard Gilbert	Newport
Leach, Charles Franklin	Lemoyne
Leavitt, William Jr.	Emporium
Martz, Ryle Edgar	Harrisburg
McNaul, Robert Wayne	Juniata
Monteros, Antonio E. de los, Jr.	Mazatlan, Mexico
Parry, Wesley Galloway	Scranton
Quintanilla, Antonio	Coyoacan, Mexico
Reed, John Earl	Oberlin
Rinehart, Harold Samuel	Mercersburg
Shields, Charles Parkhurst	Jersey City, N. J.
Simons, Harold	Bridgeport, Conn.
Sloop, Ralph Conrad	Bloom, Va.
Smith, Henry Philip	Baltimore, Md.
Stubby, William Ernest	Saxton
Studholm, Isaac Mossop	Wiconisco
Swartz, Clarence Leroy	Gettysburg
Swinn, Clarence Monroe	Newville
White, Dallas Wayne	Orrstown
Williams, Glenn Wightman	Mt. Carmel

UPPER MIDDLE CLASS

Bailey, Humphrey Brownell	Jamestown, N. Y.
Barclay, Charles Frederick	Sinnamahoning

Bollinger, Harvey Gable
 Collins, Ivan Long
 Crider, Frank Nelson
 Fichtner, Albon Russel
 Grimm, Elizabeth Adele
 Heck, Ward Stauffer
 Heinze, Edward Philip
 Hereter, Jacob Kermit
 Hunger, William Kingsley
 McCreery, Joseph Day
 Mullen, Randolph Jerome
 Robinson, Martha Jane
 Simons, Joseph Leon
 Simons, Edwin
 Sloop, Roy Luther
 Streicher, Albert Keel
 Wada, Mosaichi
 Warner, Margaret Hansel
 Wood, Robert Winthrop

New Oxford
 Gettysburg
 Hagerstown, Md.
 Conemaugh
 Gettysburg
 Uniontown, Md.
 Raspeburg, Md.
 Gettysburg
 Vandegrift
 Conshohocken
 Philadelphia
 Gettysburg
 Bridgeport, Conn.
 Bridgeport, Conn.
 Bloom, Va.
 Aldan, Del.
 Sumijoshi, Japan
 Blue Ridge Summit
 Washington, D. C.

LOWER MIDDLE CLASS

Armstrong, William McDermitt
 Bennett, Charles David
 Black, Stanley Aumen
 Clutz, Paul Alexander
 Conrad, John Olin
 Dietz, Richard Hauser
 Fortunato, Stanley Michael
 Fortunato, Leonard Henry
 Fry, John Wilmer
 Haas, Anton Frederick
 Hartman, Clayton Stanley
 Heindel, Eleanor Ireland
 Hendrickson, Harry Logue
 Kloss, John Shelley
 Lambert, Charles Francis
 Leonhart, Frederick Andrew
 Lomeli, Enrique
 Martinez, Enrique
McCullough, George Bryan
 Meyer, Stanley Clinton
 Osterlund, Ralph Dyer
 Plank, Gerald David
 Ream, George William
 Rohrbaugh, Frysinger Brown
 Senft, John Allen
 Simons, Sidney Paul
 Smith, Earl Hanes
 Snively, Isaac Newton
 Stallsmith, Katherine Gertrude
 Sterner, Ivan Lagrahn
 Taney, William Brown
 Wehler, Wilbur Philemon
 Wood, Paul Douglas

Sewell, Md.
 Philadelphia
 Reading
 Gettysburg
 Meyersdale
 Hellam
 Pittsburgh
 Pittsburgh
 Newville
 Baltimore, Md.
 Gettysburg
 Gettysburg
 Harrisburg
 Newport
 Ellwood City
 Ellwood City
 Lerdo, Tejada, Mex.
 Mazatlan, Mex.
 Friendsville, Md.
 Pittsburgh, Pa.
 Philadelphia
 Table Rock
 Johnstown
 Hanover
 Littlestown
 Bridgeport, Conn.
 Gettysburg
 Cynwyd
 Gettysburg
 Gettysburg
 East Lansdowne
 Gettysburg
 Washington, D. C.

JUNIOR CLASS

Alberts, Robert Carmen	Pittsburgh
Carr, Dorothy Elizabeth	Gettysburg
Durst, Richard Leonard	Philadelphia
Fox, Herman, Jr.	Jenkintown
Gearhart, William Henry	Blue Ridge Summit
Greenfield, Albert	New York City, N. Y.
Heckel, Harry Laird	Pittsburgh
Hoffman, Harry Donald	Johnstown
Lehr, John Clarence	Baltimore, Md.
Musselman, Margaret Elizabeth	Gettysburg
O'Brien, William Crampton	Wilmington, Del.
Potter, Harry Bradley	Karthus
Randall, Douglas Andrew	East Quoque, L.I. N.Y.
Tate, Claire William	Gettysburg
Waldman, Allen Clay	Baltimore, Md.
Wehler, Roger Harmon	Gettysburg
Yingst, Arbour Logan	Harrisburg

SUMMARY.

Number of Students in College 1921-22.

Graduate Students	37
Seniors	64
Juniors	78
Sophomores	97
Freshmen	176
Not candidates for a degree	53
	<hr/>
	505
Names duplicated	1
	<hr/>
Collegiate Department	504
Academy	110
	<hr/>
	614

COMMENCEMENT 1921

Salutatory.

Adelaide Marion Kerchner

Commencement Orator.

Hon. Andrew J. VolsteadGranite Falls, Minn.

Valedictory.

Levi David Gresh

GRADUATES.

Bachelor of Arts.

John William Albig, Jr.	Adelaide Marion Kerchner ✓
Oscar Wilhelm Carlson	Marie Nayetta Lauver ✓
Oliver Dewey Coble	Ralph Winfield Lind
Roderick Walker Cook	John Harold Little
Henry Bowman Cooper	William Potts Livengood
George Roscoe Dulebohn	Anna Harriet Miller ✓
Percy Samuel Eichelberger	George Israel Myers
Joseph Earl Endres	Genevieve Agnes Power ✓
Elwood S. Falkenstein	Paul Irvin Redcay
Glenn Markley Gardner	Samuel Sylvester Shaulis
Levi David Gresh	Ida Salome Sheads ✓
Charles Edward Hershey	Robert Emory Sheads
Edith Deardorff Hollinger ✓	Lawrence Martin Showe
Edward Lee Holman ✓	Stella Barton Shumaker ✓
John Raymond Houser	Luther Ellis Woodward
	Ruth Viola Zeiders ✓

As of the class of 1917
Ralph Vernon Hankey
As of the class of 1920
Walter Daniel Reynolds

Bachelor of Science.

Paul Donkel Baum	Carl Franklin Miller
George Lisle Beers	Charles Kitzmiller Miller
Ernest Matthias Bickell	Maurice Harry Miller
William Frederick Boath	Richard Good Mumma
Ralph Adam Bortner	Jacob Harold Mumper
Samuel Ross Buhrman	Roy McClellan Mundorff
Lyall Nichols Crissman	John Harris Nicely
Harry Bell Eberly	Paul Edward Noll
Daniel Victor Emanuel	John Stanley Rice
Karl William Etshied	James Smiley Richards
Herbert Hensey Gehauf	John Jay Shank
Georg Krohn Gülck	John Allen Sheffer
Raymond Welty Harbaugh	Allen Edward Starr
Burton Louis Hinman	Russell Deardorff Stauffer
Mason Montraville Hurd	Joseph Baird Stewart
Foster Ellis Klingaman	Alfred Graham Trundle
William Wieand Lauver	William Greenberry Weaver
Joseph Austin Lerew	David Abraham Yohe
Henry Clay McCreary	Earl Emerson Ziegler

As of the class of 1911

John William Weimer

As of the class of 1920

William Anton Buedinger

ADVANCED DEGREES.**Master of Arts.**

Horace Gilbert Becker	Hanover, Pa.
Boyd Harold Deardorff	Gettysburg, Pa.
Charles Gruber	Philadelphia, Pa.
Ralph Lee Hankey	Greensboro, N. C.
Howard Kauffman Hilner	Harrisburg, Pa.
Jane Hufford	Reading, Pa.
Grant C. Knight	Gettysburg, Pa.
Harry Davis Lighty	Dunkirk, N. Y.
Levi Benjamin Nye	Harrisburg, Pa.
Perry Dean Schwartz	York New Salem, Pa.

Master of Science.

Christian Charles Kattenhorn	Newark, N. J.
George Reich Miller	Harrisburg, Pa.
John Lloyd Sharetts	Gettysburg, Pa.

HONORS AND PRIZES.**GENERAL FINAL HONORS.**

Oscar Wilhelm Carlson

Adelaide Marion Kerchner

CLASS HONORS.**Senior.**

Oscar Wilhelm Carlson
 Percy Samuel Eichelberger
 Adelaide Marion Kerchner

Foster Ellis Klingaman
 William Potts Livengood
 Ida Salome Sheads

Junior.

Matilda Joanne Anderson
 Dixon Hoover Geiser

Russell Luther Sahm
 Ruth Anna Spangler

Sophomore.

Hazel Kathryn Bartow
 William Clarence Diehl
 Charles Harold Howard
 Charles Glenwood Hughes
 Walter Ginder McAllister

Earl George Ports
 Carl Robert Simon
 Charles Allen Sloat
 William Kohl Trauger
 Calvin Lee Zerbe

Freshman.

Harry Ludwig Carlson
 John Jacob Clutz
 Amy Rosetta Haar

Eva Cornelia Haar
 Bradford Torrey Schantz
 George Wellington Smith

DEPARTMENTAL FINAL HONORS IN PHYSICS.

Foster Ellis Klingaman

GARVER LATIN PRIZE.

Harry Ludwig Carlson

Lillian Augusta Weaver

With honorable mention of

Leon Clare Miller

Frederick Eppling Reinartz

George Wellington Smith

GARVER PRIZE IN GREEK.

Herman Franklin Gohn

With honorable mention of

Harry Ludwig Carlson

Hugh Eugene Yost

George Wellington Smith

BREWER GREEK PRIZE.

Paul Irvin Redcay

With honorable mention of

Luther Ellis Woodward

GRAEFF PRIZE IN ENGLISH.

Stella Barton Shumaker

With honorable mention of

Adelaide Marion Kerchner

John Raymond Houser

BAUM MATHEMATICAL PRIZE.

Edith Medora Tucker

With honorable mention of

Earl George Ports

MUHLENBERG FRESHMAN PRIZE.

George Wellington Smith

PRIZES IN DEBATE.**First Prize.**

Hubert Miller Linn

Rueil K .G. Rice

Pierce Main Willard

Second Prize.

Carl Lloyd Dahmen

William Melanchthon Erhard

Charles Luther Mogel

TUTTLE R. O. T. C. PRIZE

William Greenberry Weaver

RYAN R. O. T. C. PRIZE

Walter Ginder McAllister

HONORARY DEGREES.**CONFERRED AT COMMENCEMENT 1921****Doctor of Divinity.**

Rev. Jerome M. Guss	Philadelphia, Pa.
Rev. Marion Justus Kline	Altoona, Pa.
Rev. George N. Lauffer	Altoona, Pa.
Rev. Lewis C. Manges	Harrisburg, Pa.
Rev. Joseph H. Musselman	Lancaster, Pa.
Rev. George W. Nicely	Hanover, Pa.
Rev. William I. Redcay	Hanover, Pa.
Prof. Abdel Ross Wentz, Ph.D.	Gettysburg, Pa.

Doctor of Laws

Prof. Allen J. Smith, M.D., Sc.D.	Philadelphia, Pa.
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Doctor of Science

Prof. Luther P. Eisenhart, Ph.D.	Princeton, N. J.
William J. Showalter	Washington, D. C.

Master of Arts

Prof. Martin H. Thomas	Harrisburg, Pa.
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INDEX.

	Page.		Page.
Absences, Rules Governing	98	Business Management	7
Academy, Gettysburg	132	Calculus	69
Accounting, Course in	59, 60	Calendar	2, 3
Admission:		Chapel Services	97
Rules Governing	19	Church Services	97
Requirements for	20	Class Honors	103
Advanced Standing	23	Classical Course	33
Admission Subjects in Detail ..	21	Class Memorials	125
Advanced Standing, Admission to ..	23	Class Rating	27
Advanced Degrees, 1921	152	Chemistry:	
Advisers' Class	24, 96	Courses of Instruction	66
Aid for Students	106	Chemical Laboratory	118, 123
Algebra	69, 70	Christian Evidences	52
Alumni Associations	130	Civil Engineering Courses ..	77, 79
American Government and Politics ..	62	College Dormitory Rooms	111
Anatomy and Physiology	63	College Fees and Tuition	109
Anglo-Saxon	43	Commencement, 1921	151
Astronomy	74	Committees:	
Astronomical Observatory	123	Of Board of Trustees	8
Athletics, General Statement ..	128	Of the Faculty	15
Athletic Council, Members	17	Conditions and Deficiencies	100
Athletic Field	125	Constitutional Law	62
Attendance, Rules	97, 98	Contracts and Specifications ...	80
		Cottage Hall	122
Banking, Course in Money and ..	60	Council, Athletic, List of Members ..	17
Bateman Scholarship	106	Council, Student	96
Baum Mathematical Prize	104	List of Members, 1921-1922 ..	17
Bell Lectureship	75	Courses of Instruction	42
Bequest, Form of	130	Curriculum	24
Bible: Courses in English Bible ..	52		
Biblical Literature	52	Deficiencies, Rules Governing ...	100
New Testament Study	45	In Admission	21
Bills, Tuition and Fees	108	Degrees	24
Biology:		Degree, Master's	41
Courses of Instruction	63	Degrees Conferred in 1921:	
Biological Laboratory	118	Bachelor's	151
Board of Trustees:		Honorary	155
List of Members and Officers ..	7	Master's	152
Standing Committees	8	Department Honors	103
Boarding Clubs	110	Descriptive Geometry	77
Brua Chapel	123	Deutscher Verein	44
Buildings	121	Dormitory Buildings	121
Buildings and Rooms, Gettysburg		Rooms, Rent, Charges, etc. ...	114
Academy	132	Dupont Scholarship	107
Bureau of Appointments	130		
Business Administration	36	Economics	59
Business Law	60	Education, Courses in	56

INDEX

157

	Page.		Page.
Elective Subjects for Admission	21	Grades, Method of Designation	25,100
Electric Lights in Dormitories	..115	Graduates, List, 1921	.....136
Electrical Engineering		Graduation, Requirements for	28, 36
Courses	..... 38,84	Graeff Prize	.....104
Electricity, Courses in	..... 73	Greek:	
Electrical Machinery	..... 84	Courses of Instruction	..... 44
Electives	..... 28	Elementary Courses	.....44,45
Elinore Taylor Brewer Greek		Greek Prize	.....105
Prize	.....105	Gymnasium:	
Embryology	..... 64	Equipment	.....123
Employees, List of Offices and	.. 13		
Employment for Students	.....107	Hassler Latin Prize	.....104
Engineering:		Health and Sanitation	..... 66
Courses	..... 38	Heat Power Engineering	..... 83
General Statement	..... 76	Highways, Course in	..... 81
Civil Engineering	.....76, 79	Histology	..... 64
Industrial Engineering	..... 79	Historical Sketch of the College	. 4
Mechanical Engineering	.... 82	History:	
Electrical Engineering	..... 84	Courses of Instruction	..... 52
Engineering Equipment	.....119	Roman Constitutional History	40
Engineering Fees	.....110	History of Philosophy	..... 54
Engineering Library	..... 85	History of Education	..... 56
English Bible Courses	..... 52	Honorary Degrees Conferred '21	155
English, Courses of Instruction	42	Honors, Rules Governing	
Admission	..... 21	Award of	.....103
English and American Literature	42	Honors and Prizes, List, 1921	..153
English History	..... 53	Hydraulics	..... 78
Entrance Requirements:		Hygiene, Personal	..... 66
General Statement	..... 20		
Subjects in Detail	..... 21	Industrial Engineering	.....39, 76
Equipment of the College	.....117	Inspection Trips for Engineers	. 85
Ethics	..... 54	International Law	..... 62
Evidences of Christianity	..... 52	Instructors	..... 9
Examinations, Rules	.....100		
Expenses; Estimated for one yr.	111	Kinematics	..... 82
In Gettysburg Academy	.....134	Kirschner Scholarships	.....106
		Kuhns History Prize	.....105
Faculty: List of Members	.... 9		
Committees	.....15	Laboratories: Equipment	.....118
Fees, Tuition and Expenses	..109	Fees	.....110
Gettysburg Academy	.....134	Labor Problems	..... 60
Finance, Corporation	..... 61	Latin:	
French:		Courses of Instruction	..... 46
Courses of Instruction	..... 49	Admission Requirements	..... 22
		Lectures	..... 48
General Information	..... 96	Law: International	..... 62
Geography	..... 22	Business Law	..... 60
Geology	..... 68	Constitutional Law	..... 62
German:		Roman Law	..... 48
Courses of Instruction	..... 43	Lectureships	..... 75
Gettysburg Academy	.....132	Library: General Statement	...117
Gettysburg, Location of	..... 6	Of Literary Societies	.....117
Glafelter Hall	.....122	Of Engineering	..... 85

	Page		Page.
Linguistic Science	44	Political History of Europe	52
Literary Societies	127	Political Science Courses	62
Logic	54	Power Plant Design	83
Lyceum Course	75	Pre-medical Course	33
		Prescribed Subjects for Admission	21
MacFarlane, James, Fund	117	Presidents of the College	
Machine Design	82	1832-1922	5
Majors and Minors	27	Prizes: General Statement	104
Masonry	80	List of Awards 1921	153
Master's Degree:		Probation	102
Requirements	41	Property of Students	116
Material Equipment of College ..	117	Psychology	53, 56
Materials Testing	78	Publications	128
Mathematical Physics	74	Public Speaking	43
Mathematical Prize	104	Prescribed Work	29
Mathematics:			
Courses of Instruction	69	Reading Room	118
Admission Requirements ..	22, 69	Records, Grades, etc.	25, 100
McKnight Hall	121	Re-examinations	100
Mechanical Engineering		Registration	20
Courses	38, 82	Reinstatement	103
Mechanical Drawing Course	77	Religion, Philosophy of	55
Mechanics	78	Report of Student's Record	25
Memorials of Classes	125	Requirements for Admission	20
Military Science and Tactics:		Requirements for Graduation ..	20
General Statement	86	Roman History	48
Courses of Instruction	87	Roman Law	48
Mineralogy	68	Roman Constitutional History ..	48
Modern Language Requirements	29	Rooms: Assignment	111
Money and Banking, Course in .	60	Rental Rates	114
Muhlenberg Freshman Prize ..	104	R. O. T. C.	86
Museum	121		
Musical Organizations	128	Samuel Garver Greek Prize	105
		Samuel Garver Latin Prize	105
New Testament Study in Greek	45	Sanitation	66
Officers, Lists:		Schedule and Enrollment	25
Board of Trustees	7	Scholarships and Aid for	
Faculty	9	Students	106
Student Council	17	Semester Hour Defined	24
Alumni Association	130	Seminaries:	
Oratorical Contests	127	Biological	65
Organic Chemistry	67	Civil Engineering	81
Outline of Courses	30-40	Education	58
		Electrical Engineering	84
Pennsylvania Hall	121	Mechanical Engineering	83
Philosophy Courses	53	Physics	74
Physical Culture	66, 100	Sewerage	81
Physical Laboratory	118	Shopwork	82
Physics:		Sociology	54
Courses of Instruction	72	Spanish Courses	50
Admission Requirements	72	Statics and Dynamics	78
Physiology, Anatomy and	63	Structural Design and Drafting.	80

	Page.		Page.
Stuckenberg Lectureship in		Terms and Vacations	97
Sociology	75	Thaddeus Stevens Hall	122
Students:		Treasurer's Bills	108
List, College 1921-22	137	Trigonometry	69
List, Gettysburg Academy ..	147	Trustees, Board of	7, 8
Student Council	96	Tuition and Fees, College	109
List of Members, 1921-22	17	Gettysburg Academy	134
Students' Interests	127	Unit Defined	21
Student Property	116	Vacations	97
Student Publications	128	Water Supply Engineering	81
Students Not Candidates for		Weidensall Y. M. C. A.	124
a Degree	19	Y. M. C. A.	124, 127
Subjects for Admission	21	Zoölogy, Courses	63
Summer School	93	Admission Requirements	23
Surveying	79		
Teachers: Note on Preparation			
for Teaching	129		
Teachers' Course	34		
Technical Courses	33, 36		

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[Formerly Pennsylvania College]

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Gettysburg, Pa.

Gettysburg College

Founded in 1832

Issued Quarterly

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April—1923

No. 2

Published by the College

Entered at the Post Office at Gettysburg, Pa., as second-class matter under Act of Congress July 16, 1904.

CALENDAR FOR 1922-1923-1924

1922

Session days are indicated by bold-face type.

September							October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	1	2	1	2	3	4	5	6	7	..	..	..	1	2	3	4	..	..	..	..	1	2	
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
24	25	26	27	28	29	30	29	30	31	..	..	..	..	26	27	28	29	30	..	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..

1923.

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	1	2	3	4	5	6	..	..	..	..	1	2	3	..	..	..	..	1	2	3	1	2	3	4	5	6	7
7	8	9	10	11	12	13	4	5	6	7	8	9	10	4	5	6	7	8	9	10	8	9	10	11	12	13	14
14	15	16	17	18	19	20	11	12	13	14	15	16	17	11	12	13	14	15	16	17	15	16	17	18	19	20	21
21	22	23	24	25	26	27	18	19	20	21	22	23	24	18	19	20	21	22	23	24	22	23	24	25	26	27	28
28	29	30	31	..	..	..	25	26	27	28	..	..	..	25	26	27	28	29	30	31	29	30	..	..	..	..	..
..

May							June							July							August						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	1	2	3	4	5	..	..	..	..	..	1	2	1	2	3	4	5	6	7	..	..	..	1	2	3	4
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25
27	28	29	30	31	..	..	24	25	26	27	28	29	30	29	30	31	..	..	..	..	26	27	28	29	30	31	..
..

September							October							November							December						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	..	1	..	1	2	3	4	5	6	..	..	..	1	2	3	..	..	..	..	..	..	1	
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22
23	24	25	26	27	28	29	28	29	30	31	..	..	..	25	26	27	28	29	30	..	23	24	25	26	27	28	29
30	30	31

1924.

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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6	7	8	9	10	11	12	3	4	5	6	7	8	9	2	3	4	5	6	7	8	6	7	8	9	10	11	12
13	14	15	16	17	18	19	10	11	12	13	14	15	16	9	10	11	12	13	14	15	13	14	15	16	17	18	19
20	21	22	23	24	25	26	17	18	19	20	21	22	23	16	17	18	19	20	21	22	20	21	22	23	24	25	26
27	28	29	30	31	..	..	24	25	26	27	28	29	..	23	24	25	26	27	28	29	27	28	29	30	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	31	..	..	..	..	..	..	..	..	..	..	..	..

May							June							July							August						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	1	2	3	1	2	3	4	5	6	7	..	..	1	2	3	4	5	..	..	..	..	..	1	2
4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9
11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16
18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23
25	26	27	28	29	30	31	29	30	..	..	..	..	..	27	28	29	30	31	..	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..

COLLEGE CALENDAR--1922-1923-1924.

1922.

September 18, 19... Monday and Tuesday, Entrance Examinations.
 September 20..... Wednesday, 11 A. M., College Year begins.
 September 20.... .. Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 30..... Thanksgiving Day. Holiday.
 December 4..... Monday, 1 P. M., Mid-Winter Meeting of
 Board of Trustees in Harrisburg.
 December 20..... Wednesday, Noon, Christmas Recess begins.

1923.

January 4..... Thursday, 7.45 A. M., Christmas Recess ends.
 March 29..... Thursday, Noon, Easter Recess begins.
 April 4 Wednesday, 7.45 A. M., Easter Recess ends.
 April 7..... Founders' Day.
 May 16..... Wednesday, Latin Examination for Hassler
 Prize.
 May 28 to June 2... Monday to Saturday, Senior Final Examina-
 tions.
 May 30..... Decoration Day. Holiday.
 June 4 to 11..... Monday to Monday, General Final Examina-
 tions.
 June 10..... Sunday, 10.45 A. M., Baccalaureate Sermon.
 June 11..... Monday, 8 P. M., Concert by Combined Musi-
 cal Clubs in Brua Chapel.
 June 11, 12..... Monday and Tuesday, Entrance Examinations.
 June 12..... Tuesday, 9.30 A. M., Annual Meeting of Board
 of Trustees in Gettysburg.
 June 12..... Tuesday, 10 A. M., Senior Class Day Exercises.
 June 12..... Tuesday, Alumni Class Reunions.
 June 12..... Tuesday, 4 P. M., Baseball Game.
 June 13..... Wednesday, 10 A. M., Commencement Exer-
 cises.
 June 13..... Wednesday, Noon, Alumni Collation.

Summer Vacation.

September 17, 18... Monday and Tuesday, Entrance Examinations.
 September 19..... Wednesday, 11 A. M., College Year begins.
 September 19..... Wednesday, 8 P. M., Y. M. C. A. Reception.
 November 20..... Thanksgiving Day. Holiday.
 December 3..... Monday, 1 P. M., Mid-Winter Meeting of
 Board of Trustees in Harrisburg.
 December 19.... .. Wednesday, Noon, Christmas Recess begins.

1924.

January 3..... Thursday, 7.45 A. M., Christmas Recess ends.
 January 28 to Monday to Saturday, Examinations closing
 February 2..... First Semester.
 February 2..... Saturday, Noon, First Semester ends and
 Second Semester begins.
 February 22..... Washington's Birthday. Holiday.
 April 17..... Thursday, Noon, Easter Recess begins.
 April 23..... Wednesday, 7.45 A. M., Easter Recess ends.
 June 11..... Wednesday, Commencement.

HISTORICAL.

The Charter of Gettysburg College was approved April 7, 1832. The opening paragraphs are as follows:

"WHEREAS, the literary and scientific institution in Gettysburg, Adams County, in this Commonwealth, known by the name of Gettysburg Gymnasium, is resorted to by a large number of young men from different portions of this State, and elsewhere, and promises to exert a salutary influence in advancing the cause of liberal education; therefore,

"SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, That the Gettysburg Gymnasium be, and hereby is erected into a College, for the education of youth in the learned languages, the arts, sciences and useful literature.

"SECTION 2. And be it further enacted by the authority aforesaid, That the style and title of said College shall be 'Pennsylvania College of Gettysburg'* and that it shall be under the management, direction and government of all the subscribers to the funds of said institution, by whose private contributions the said funds have been raised and its present edifice purchased, to wit: John B. McPherson, Thomas C. Miller, Thomas J. Cooper, Samuel Fahnestock, Samuel S. Schmucker, Ernest L. Hazellius, David F. Schaeffer, John G. Morris, Benjamin Kurtz, William Heim, Charles P. Krauth, Frederick D. Schaeffer, J. George Schmucker, J. F. Heyer, Jacob Martin, Abraham Reck, William Ernst, Jacob Medtard, Lewis Eichelberger, Michael Meyerheffer, Jonathan Ruthrauff,

*On Nov. 14, 1921, the name was changed to Gettysburg College.

Jacob Crigler, John F. Macfarlane, Robert Goodloe Harper, John Herbst, and their successors, to be elected as hereinafter mentioned."

The College in a large measure grew out of the necessity of properly preparing men for the Theological Seminary, established in 1826 at Gettysburg. This purpose has never lessened, and to-day the institution regards this as an important feature of its work and offers special opportunities to young men preparing themselves for theological studies. Gettysburg College in its beginnings and its history is closely identified with the Lutheran Church.

The College began without endowment, with one small building (now a residence on the south-east corner of Washington and High streets), and a small attendance. But the wholesome enthusiasm of its able instructors, the loyalty and self-sacrifice of its officers, students, and alumni, and the devotion of its friends, have made its history down to the very present one of steady and continuous growth. To-day Gettysburg College is rated as a college of the highest grade by the United States Bureau of Education, by the Department of Education of every State in the United States, and by all other educational authorities and standardizing agencies.

Following is a list of the Presidents of the College from its foundation to the present time:

1832-34, Samuel S. Schmucker, D.D., Founder.

1834-50, Charles Philip Krauth, D.D., First President.

1850-68, Henry L. Baugher, D.D., Second President.

1868-84, Milton Valentine, D.D., LL.D., Third President.

1884-1904, Harvey W. McKnight, D.D., LL.D., Fourth President.

1904-10, Samuel G. Hefelbower, Ph.D., D.D., Fifth President.

1910-23, William A. Granville, Ph.D., LL.D., Sixth President.

LOCATION.

Gettysburg is situated in the beautiful rolling country a few miles west of the South Mountain ridge of the Blue Mountains. The situation is healthful, and there is a good supply of filtered water. The town is readily reached from all directions by the Philadelphia & Reading and the Western Maryland Railways, which connect at Harrisburg, Pa., and Baltimore, Md., with the great railway systems of Pennsylvania and the South, and by Auto Bus Lines from Harrisburg, York, Hanover, Chambersburg and Littlestown. Washington, Baltimore, Harrisburg, York, Hagerstown, Chambersburg, Carlisle, and other important centers are connected with Gettysburg by splendid State Highways making it a very important automobile tourist center. The Coast to Coast Lincoln Way passes through Gettysburg.

The historic association of Gettysburg with the Civil War gives the locality great additional interest. The events of the Battle of Gettysburg are recorded in inscriptions on about four hundred monuments and one thousand markers, many of these being of large size and of great artistic merit. The Battlefield is made accessible by over forty miles of very fine avenues, along which are the markings that show the battle lines. Miles of the rifle pits and other intrenchments have been preserved, as well as scores of lunettes. Here also is the National Cemetery at the dedication of which Lincoln made his memorable Gettysburg Address. Such surroundings develop a love of our united country and inspire to better citizenship.

The college buildings were all used as hospitals during and after the Battle of Gettysburg; and the Fiftieth Anniversary of the Battle of Gettysburg Commission had its headquarters on the campus, July 1-4, 1913.

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1912.	CHARLES H. BOYER.....	Chicago, Ill.
1913.	HON. LUTHER A. BREWER.....	Cedar Rapids, Ia.
1914.	FREDERICK H. KNUBEL, D.D., LL.D....	New York, N. Y.
1914.	PERCEY D. HOOVER, M.D.....	Waynesboro
1915.	LESLIE M. KAUFFMAN, M.D.....	Kauffman's
1915.	HARVEY C. MILLER.....	Philadelphia
1916.	JOHN B. McALISTER, M.D.....	Harrisburg
1917.	JEREMIAH ZIMMERMAN, D.D., LL.D....	Syracuse, N. Y.
1918.	LOUIS S. WEAVER, M.D.....	York
1921.	HARRY C. HOFFMAN, M.D.*.....	Connellsville
1921.	JOSEPH B. BAKER, D.D.*.....	Indiana
1922.	CHARLES T. LARK, Esq.....	New York, N. Y.

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3 Campus

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130 Carlisle St.

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145 Lincoln Ave.

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227 Carlisle St.

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Professor of Military Science and Tactics and Commander
Reserve Officers' Training Corps (R. O. T. C.)
W. Lincoln St.

Adeline Sager Professor of History
(Will be appointed for 1923-24)

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Assistant Professor of Chemistry
24 E. Lincoln St.

GEORGE REICH MILLER, M.S.
Assistant Professor of Physics
3 West St.

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Assistant Professor of Military Science and Tactics (R. O. T. C.)
450 W. Middle St.

CAPTAIN SAMUEL C. THOMPSON, Infantry, D.O.L., U. S. A.
Assistant Professor of Military Science and Tactics (R. O. T. C.)
Hotel Gettysburg

JAMES ALLEN DICKSON, A.M.
Instructor in Chemistry
263 Springs Ave.

CALVIN GILBERT REEN, B.S.
Instructor in Engineering
144 Springs Ave

JOHN ROY LOVELL, A.B.
Instructor in French
28 Chambersburg St.

WILLIAM WALLACE WOOD, B.S.
Instructor in Mathematics
Seven Stars

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GUY S. KLETT, Ph.B.
Instructor in English and History

32 Water St.

RAYMOND THOMAS STAMM, A.B.
Instructor in English Bible and History

Room 51, Seminary.

JOHN WILLIAM ALBIG, Jr., A.B.
Instructor in English

3 Water St.

PAUL C. SQUIRES, A.M.
Instructor in Psychology

418 Carlisle St.

ALBERT C. GUBITZ, A.B.
Instructor in Economics

512 W. Middle St.

HERBERT G. HAMME, A.B.
Instructor in Romance Languages

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ERNEST D. MENKEE, B.S.
Instructor in Engineering

209 Washington St.

FRED C. MILLS, Captain Red Cross Life Saving Corps
Instructor in Swimming

Washington, D. C.

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Instructor in Military Science and Tactics (R. O. T. C.)

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Assistant in Mathematics

218 Baltimore St.

JOHN ALLEN SHEFFER, B.S.
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133 Chambersburg St.

PAUL E. LAWYER, A.B.
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140 Broadway

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Stuckenberg Lecturer on Sociology

Pittsburgh, Pa.

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DOYLE REVERE LEATHERS, B.S.
Senior Master and Instructor in Mathematics in Gettysburg
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411 Carlisle St.

CLARENCE ARTHUR NEAL, A.B.
Master in Greek in Gettysburg Academy
Room 26 Stevens Hall

GEORGE ROSCOE DULEBOHN, A.B.
Master in English and History in Gettysburg Academy
Room 306 Main

JOSEPH AUSTIN LEREW, A.B.
Master in French and History in Gettysburg Academy
Room 33 Stevens Hall

EARL EMERSON ZIEGLER, B.S.
Master in Mathematics and Physics in Gettysburg Academy
Room 204 Main

CALVIN LEE ZERBE
Master in French in Gettysburg Academy
Room 3 Junior House

HARVEY ALLEN HESSER
Master in Music in Gettysburg Academy
Room 317 Main

RAYMOND EDGAR DOYLE
Master in Business in Gettysburg Academy
Room 3 Junior House

GETTYSBURG COLLEGE

HERBERT WERTZ MECKLEY
Student Assistant in Accounting

Hanover, Pa.

WILMER KOHL TRAUGER
Student Assistant in History

121 P.

DAVID EDWARD BECKMEYER	Room 403 P.
JAMES DONALD GLENN	147 Chambersburg St.
WAYNE REYNER PAGE	Room 422 P.
CHARLES ALLEN SLOAT	115 Buford Ave.

Student Laboratory Assistants in Chemistry

EARL GEORGE PORTS	Room 412 P.
FRANKLIN LLOYD SNYDER	Room 412 P.
ANNA LEONA HANKEY	39 Baltimore St.

Student Laboratory Assistants in Physics

RALPH ALDEN GEISELMAN	Room 121 P.
Student Assistant in Shop Work	

LUTHER BROOK WALTER	Room 204 P.
Student Assistant in Surveying	

HENRY FREDERICK GEISZ	Room 257 C.
Student Assistant in Civil Engineering	

JOHN G. KOONTZ	Room 324 P.
WILLIAM S. RAY	Room 358 C.
HENRY F. GEISZ	Room 257 C.
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EDWARD SWOYER BREIDENBAUGH, Sc.D.
Curator of Museum

227 Carlisle St.

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15

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Medical Director

300 Carlisle St.

KARL JOSEF GRIMM, Ph.D.
Librarian

298 Baltimore St.

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Office, 16 Center Square

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Registrar and Secretary of the Faculty
24 E. Lincoln St.

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Athletic Director
Room 314 Main

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130 Carlisle St.

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Chief Proctor, Pennsylvania Hall
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Proctor in McKnight Hall

Room 240 McK.

BRADFORD TORREY SCHANTZ
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Room 308 P.

WALTER HENRY HILL
Proctor in Cottage Hall

Room 260 C.

MERLE BOWERS HAFFER
Custodian of Reading Room
Robert Weidensall Y. M. C. A. Hall

EDWARD RICHARD REITER
Assistant to Registrar

Room 157 C.

EDWARD BARD BULLER
Assistant to Y. M. C. A. Secretary
Robert Weidensall Y. M. C. A. Hall

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Watchman
218 N. Stratton St.

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48 Stevens St

MRS. CONRAD SMITH
Stewardess in Gettysburg Academy
504 Carlisle St.

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17

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Matron in Gettysburg Academy

108 Main

JOSEPH CARVER
Janitor

4 Campus

MERVE CARVER
Janitor

4 Campus

CONRAD SMITH
Janitor

504 Carlisle St.

MRS. IDA R. SPANGLER
Janitress

152 W. Middle St.

J. A. JONES
Assistant Engineer

Room 20 Main

COMMITTEES OF FACULTY.

Admission to Freshman Class.

GRIMM, BIKLE, CLUTZ, ARMS, STOVER

Admission to Advanced Standing.

ARMS

Library.

GRIMM, GRANVILLE

Curriculum.

PARSONS, CLUTZ, STOVER

Bulletin.

HAGEN, PARSONS, ARMS, CLINE
GRANVILLE, Ex-officio

Hour Schedule.

BREIDENBAUGH, GRIMM, CLUTZ, KRAMER, NIXON

Students' Publications.

SANDERS, HAGEN, VALENTINE

Supervision of Finance of Student Organizations.

KRAMER, SANDERS, JOHNSTON

College Discipline.

PARSONS, BIKLE, STAHLEY, VALENTINE

Lectures.

GRANVILLE, BIKLE, ROSENSTENGEL, JOHNSTON

Advanced Degrees.

GRIMM, BIKLE, STAHLEY

Representative on Athletic Council.

VALENTINE

Supervision of Social Functions.

BILLHEIMER, KRAMER

Student Organizations.

BREIDENBAUGH, KRAMER, SEHRT

Dormitory Rooms.

PARSONS, STOVER, PICKING, JOHNSTON

Supervision of Musical Clubs.

CLUTZ

Electric Service.

ROSENSTENGEL

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Student Representative

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WILLIAM A. GRANVILLE
Ex-officio, President of the College

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Vice-President

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HARRY L. CARLSON, '24

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RUSSEL P. DORAN, '25

ADMISSION.

APPLICATION FOR ADMISSION.

Any one desiring to enter the College should make written application for admission on an official certificate form to be obtained from the Registrar. In the application he should present evidence of a good moral character and of the fulfillment of the entrance requirements, and state the degree for which he is a candidate. A student coming from another institution must present a certificate of good standing and honorable dismissal.

An applicant may, however, in his application for admission, state that he is not a candidate for a degree, in which case, if admitted, he will be enrolled in the list of "Students not Candidates for a Degree" and be permitted to take such work as he is prepared to pursue to advantage. Students of the Theological Seminary are admitted to one or more courses in the College.

All changes of enrollment with reference to degrees require that the candidate must make application for, and satisfy the requirements of, the degree for which he becomes a candidate.

METHODS OF ADMISSION.

A student is admitted either by *examinations* held on the Monday and Tuesday preceding the opening of College in September, or by presenting a *certificate* from an approved secondary or high school or from an approved private instructor. The certificate must state the amount of work done and the time spent on each subject, together with the grades received; and the official forms of

certificates (on which the application for admission is made), which may be obtained from the Registrar, *should be used in all cases* to insure the presentation of the necessary information for the Entrance Committee. These certificates should be filled out and returned to the Registrar before the beginning of the college year.

REGISTRATION, ETC.

Every student must call at the Registrar's office at the beginning of the college year and secure instructions in regard to registration and enrollment in classes, and must attend to the details according to the instructions given.

A new student must sign the matriculation pledge and pay the registration fee of \$5.00. Every one, whether a new student or one previously in attendance, must register at the beginning of each year. Beginning with the Monday following the opening of the College, delay in registration is penalized by the imposition of a fee of one dollar for each day of delay up to a maximum of five dollars. Any student entering late will be held responsible for making up all work from the beginning of the semester. No student will be admitted to College later than two weeks after the beginning of the semester except by special permission of the Faculty.

REQUIREMENTS FOR ADMISSION.

Only those are admitted who are graduates of a standard high school or who present evidence of having equivalent preparation.

The scholarship requirement for admission to the Freshman class is the satisfactory completion of 15 units of work, of which 3 units must be in English and 2 units

in Mathematics. A unit of work in any subject is the amount of work done in a standard secondary school in a year of 32 weeks with 5 recitation periods per week of 45 minutes each. No student will be admitted as a candidate for any degree who does not fully satisfy these requirements except that a condition of one unit in Mathematics may be allowed. This because of the fact that in some states students who have had only one year of Mathematics are allowed to graduate from a four-year high school. To make up the total of 10 units in addition to the 5 units of prescribed English and Mathematics, the applicant for admission may offer any subjects given in an approved secondary or high school as listed below.

Although English and Mathematics are the only subjects specifically prescribed for admission to the College, a student may pursue only those subjects in the college curriculum for which he has had adequate preparation. The additional entrance requirements are given on pages 31, 39 and 82. In case these prerequisite studies are not offered for entrance they must be taken either in Gettysburg Academy or in some other approved way before the college studies for which they are prerequisite may be taken, and credit for such prerequisite studies will not count in the total semester hours required for graduation.

RATING OF SUBJECTS FOR ADMISSION.

English.

Grammar, composition, and literature, recommended by the National Conference on Uniform Entrance Requirements3* units.

*As the first English work in the high school or preparatory school course is largely grammar, the credit granted in English is one unit less than the number of years of work in this subject.

Mathematics.

- A. Algebra—to quadratics1 unit.
- B. Algebra—quadratics and beyond $\frac{1}{2}$ unit.
- C. Algebra—advanced $\frac{1}{2}$ or 1 unit.
- D. Plane Geometry1 unit.
- E. Solid Geometry $\frac{1}{2}$ unit
- F. Plane Trigonometry $\frac{1}{2}$ unit.
- G. Commercial Arithmetic $\frac{1}{2}$ or 1 unit
- H. Composite Mathematics1 unit.

Mechanical Drawing.

- One year $\frac{1}{2}$ or 1 unit.

Greek.

- A. Grammar and four books of Xenophon2 units.
- B. Composition, three books of Homer, and sight translation1 unit.

Latin.

- A. Grammar and four books of Caesar2 units.
- B. Composition and six books of Cicero1 unit.
- C. Six books of Vergil1 unit.

German.

- One to three years1 to 3 units.

French.

- One to three years1 to 3 units.

Spanish.

- One to three years 1 to 3 units.

History.

- United States $\frac{1}{2}$ or 1 unit.
- England $\frac{1}{2}$ or 1 unit.
- Ancient $\frac{1}{2}$ or 1 unit.
- Medieval $\frac{1}{2}$ or 1 unit.
- Modern European $\frac{1}{2}$ or 1 unit.

Economics $\frac{1}{2}$ or 1 unit.**Sociology $\frac{1}{2}$ or 1 unit****Civics $\frac{1}{2}$ or 1 unit.****Problems of Democracy $\frac{1}{2}$ or 1 unit.****Geography, Political and Physical $\frac{1}{2}$ or 1 unit.****Geography, Commercial $\frac{1}{2}$ or 1 unit.**

Chemistry.

One year with laboratory work	1 unit
One year without laboratory work	$\frac{1}{2}$ unit.

Physics.

One year with laboratory work	1 unit.
One year without laboratory work	$\frac{1}{2}$ unit.

Biology (Botany, Zoölogy).

One year with laboratory work	1 unit.
One year without laboratory work	$\frac{1}{2}$ unit.

General Science.

One year with laboratory work	1 unit.
One year without laboratory work	$\frac{1}{2}$ unit.

ADDITIONAL SUBJECTS.

In view of the new high school curriculum adopted by the Department of Public Instruction for the State of Pennsylvania credit may be given also in the following subjects: Bookkeeping, Stenography, Office Practice, Commercial Law, Business Organization, Salesmanship, Shop work, Agriculture.

ADMISSION TO ADVANCED STANDING.

A student coming from another institution must satisfy the entrance requirements.

After having been admitted to college the student who may wish to receive advance standing

(a) will present evidence of work pursued and honorable dismissal to the Committee on Advanced Standing. The Committee will provide him with directions and detailed estimate of the tentative hours of credit claimed.

(b) He will then call upon the professors indicated, present his credentials, and be given reports.

(c) He will return the reports to the Committee on Advanced Standing for checking and deposit with the Registrar.

No one is admitted to College after the beginning of the Senior year except by special action of the Faculty.

CURRICULUM

DEGREES.

Courses of study are offered consisting of four years of college work leading to the following degrees:—

- (1) Bachelor of Arts.
- (2) Bachelor of Science.
- (3) Bachelor of Science in Business Administration.
- (4) Bachelor of Science in Industrial Engineering.
- (5) Bachelor of Science in Civil Engineering.
- (6) Bachelor of Science in Mechanical Engineering.
- (7) Bachelor of Science in Electrical Engineering.

ADVISERS.

When a student is admitted to the College some member of the Faculty is designated by the Registrar as his adviser and shall continue as his adviser until the student chooses his major subject, at which time the professor in charge of the major subject becomes his adviser and continues as such thruout his course. The adviser is the medium of communication between the student and the Faculty. The student is required to consult his adviser in regard to his course of study and to secure each year his adviser's approval of his study list, and he should feel free to consult him also on other matters.

COURSES AND CREDITS.

The courses of instruction are given in detail on pages 45-93. The amount of credit given for each course is specified in terms of semester hours. A *semester hour* of college work consists of one hour per week of lectures or classwork or 2 or 3 hours of laboratory work (or lab-

oratory work combined with classwork), drawing, shop-work or field work, per week for one semester.

A record is kept of all credits earned by each student for work done, which record includes the semester hours and the grades. The grades of scholarship are designated as follows: A (excellent); B (good); C (fair); D (poor, barely passed); E (failed, but entitled to a re-examination); and F (failed utterly and must repeat with the next class). In addition to these grades a student's record may show a subject marked "inc.", meaning "incomplete."

Each student who graduates will, on request in person, be furnished with a certified copy of his college record. Requests for such certificates, when furnished in duplicate or thru correspondence, should be accompanied by a remittance of one dollar. Students who leave college before graduation and who are in good standing are entitled to certificates on the same terms.

REPORT.

A report from the above record is sent to the parents or guardian of each student at the end of each semester. About the middle of each semester notice is given to the student and to his parents or guardian if his work is of low grade or if he has an excessive number of absences.

SCHEDULE AND ENROLLMENT.

Most of the studies in the Freshman and Sophomore years are prescribed, but in the Junior and Senior years there is for candidates for A.B. and B.S. a rather wide choice of subjects under the major and minor system. The list of subjects selected by the student for the ensuing year (including the major subject, the minor, and the electives), approved by the adviser, must be filed by the student in the Registrar's office (on the proper form

furnished by the Registrar) on or before April 1 of each year except the Senior. This study list must be obtained from the Registrar at the time of Registration the following September and must then be indorsed by the adviser and the Registrar. The student will then be enrolled by the respective instructors in the classes designated in his approved study list. No student will receive credit in any classes in which he is not so enrolled.

After the first week of the year changes in courses can be made only when approved by the Faculty, under such conditions as may be determined in each case. No regular student may drop a subject without faculty permission; failure to secure such permission will be regarded as a deficiency in that subject.

No candidate for a degree is allowed to take less than 14 semester hours except by special action of the Faculty. In the case of a student assistant doing actual teaching, such teaching may be counted as part of the 14 hours.

A Freshman is limited in his enrollment to the number of semester hours listed in the Freshman schedule. No student whose record during the preceding year shows a majority of grades below B will be allowed to take during the Sophomore year more semester hours of work than the number listed in the Sophomore schedule; or during the Junior or Senior years more than 18 semester hours per semester in the case of candidates for A.B. and B.S., or more than the semester hours scheduled for the Engineering or Business Administration students in the Junior and Senior years.

If a student's record during the preceding year shows a majority of grades (reckoned by semester hours) A or B and none below C, he may be allowed to enroll for a greater number of semester hours, as follows:

(a) In the Sophomore year, 20 semester hours per semester, or 2 semester hours per semester more than

the number given in the Sophomore schedule for the given degree, if the number scheduled is greater than 18 semester hours per semester.

(b) In the Junior and Senior years, 20 semester hours per semester.

Only honor students are allowed to take more than the number of semester hours above specified (and that number must include all "make up" and prerequisite work). Honor students will be allowed to take 22 semester hours in the Junior year and 23 in the Senior year. An honor student is one whose record during the preceding year shows a majority of grades A and nothing below B. A student who has been an honor student during three complete years will be allowed to graduate with 132 semester hours, provided all of the studies prescribed for the degree have been completed.

An extra tuition fee of \$5.00 is charged any student for each semester hour of college work in excess of 18 semester hours per semester or in excess of the semester hours required by the schedule if that be in excess of 18.

CLASS RATING AND SCHOLARSHIP DEFICIENCIES.

A student will not be advanced in class enrollment (or rating) at the beginning of any year if he is deficient in as much as one third of the previous year's work (reckoned by semester hours); and if on Oct. 20 he is still deficient in one third of a year's work his rating will not be advanced during that academic year. Work to remove a deficiency must be included in the student's class enrollment in the year following the one in which the deficiency occurred.

MAJORS AND MINORS.

Each candidate for the Degree of Bachelor of Arts or Bachelor of Science should choose as early as possible

and not later than March 1 of the Sophomore year one major subject, on which he intends to concentrate, and one minor subject related to the major. As soon as the choice of major has been certified by the Registrar, the professor in charge of the major subject becomes the student's adviser and continues as such until the end of the Senior year. The adviser must approve a list of studies for the student for the following year, including the major and minor and electives, which list must be given to the Registrar not later than April 1.

A major consists of not less than 18 semester hours in a single subject or department, of which at least 12 semester hours must be taken in advanced subjects. A major may not contain more than 36 semester hours in a single subject, including the work done in that subject in the Freshman and Sophomore years. A minor subject consists of 12 or more semester hours, of which at least 6 must be advanced work. The following subjects may be chosen as majors:

English	Education
Greek	Economics
Latin	Political Science
German	Mathematics
French	Biology
Philosophy	Chemistry
History	Physics

REQUIREMENTS FOR THE BACHELOR'S DEGREE.

The degrees of Bachelor of Arts and Bachelor of Science will be conferred upon students who are enrolled as candidates for the respective degrees, and who fulfill the following requirements:

(1) Satisfactorily complete 136 semester hours of work, except that honor students may be graduated upon the completion of 132 semester hours.

(2) Receive a grade of B or better in at least 80 semester hours of college work.

(3) Complete satisfactorily the prescribed work as indicated below, including all preparatory or prerequisite work, and the major, minor and electives approved by the adviser.

No student will be graduated who is not present at the Commencement, unless he be excused by the Faculty.

PRESCRIBED WORK FOR THE DEGREE OF BACHELOR OF ARTS.

College Work.	Prerequisite Entrance Work.
1. <i>English</i> , 10 sem. hrs.	<i>English</i> , 3 units
2. <i>Foreign Language</i> , 24 sem. hrs., including:	
a. <i>Latin</i> , 12 sem. hrs.	<i>Latin</i> , 4 units
b. <i>2nd For. Lang.</i> , 12 sem. hrs.	<i>2nd. For. Lang.</i> , 2 units
or <i>2nd For. Lang.</i> , 18 sem. hrs.	No prerequisite
3. <i>History</i> , 4 sem. hrs.	
4. <i>English Bible</i> , 2 sem. hrs.	
5. <i>Philosophy</i> , 6 sem. hrs.	
6. <i>Economics or Political Science</i> , 6 sem. hrs.	
7. <i>Mathematics</i> , 6 sem. hrs.	<i>Math.</i> , 2 units including 1 unit of Algebra
8. <i>Biology, Chemistry, or Physics</i> , 8 sem. hrs.	

PRESCRIBED WORK FOR THE DEGREE OF BACHELOR OF SCIENCE.

College Work.	Prerequisite Entrance Work.
1. <i>English</i> , 10 sem. hrs.	<i>English</i> , 3 units
2. <i>Foreign Language</i> , 18 sem. hrs., including a and either b or c:	

- a. *Mod. Lang.*, 12 sem hrs. *Mod. Lang.*, 2 units
or *Mod. Lang.*, 18 sem hrs. No prerequisite
- b. *2nd Mod. Lang.*, 6 sem. hrs. *2nd Mod. Lang.*, 2 units
or *Mod. Lang.*, 12 sem. hrs. No prerequisite
or c. *Latin* or *Greek*,
6 sem. hrs. *Latin*, 4 units
3. *History*, 4 sem hrs.
4. *English Bible*, 2 sem. hrs.
5. *Philosophy*, 6 sem. hrs.
6. *Economics* or *Political Science*, 6 sem. hrs.
7. *Mathematics*, 6 sem. hrs. *Math.*, 2 units. including
1 unit of Algebra.
8. a. For students majoring in Biology, Chemistry, or Physics, three one-year courses in two of the following subjects, outside of the major: *Mathematics*, *Biology*, *Chemistry*, *Physics*.*
8. b. For students majoring in Mathematics and other subjects, two one-year courses in two of the following subjects, outside of the major: *Biology*, *Chemistry*, *Physics*.

SCHEDULE OF PRESCRIBED STUDIES FOR A.B. STUDENTS.

Freshman Year.

		Sem.	Hrs.	Notes
English	.....	6		
Latin	.....	6		
Foreign Language	.....	6		
Mathematics	.....	6	.....	2
Biology	.....	8	one.....	
Chemistry	... }			
Physics	.....		
History and Bible	.....	6		
Military Science	... }	2	one.....	3
Physical Training	.. }			
		<hr/>		
		40		

*Thus, if the major is Biology, the student may take two years in Mathematics and one year in Chemistry or Physics; or, two years in Chemistry or Physics and one year in Mathematics; or, two years in Chemistry and one year in Physics, etc.

Sophomore Year.

	Sem.	Hrs.	Notes
English	4		
Latin	6		
Foreign Language	6	4	
Philosophy	4		
Military Science ...	one	2	3
Physical Training ...			
Electives		12	
		<hr/> 34	

SCHEDULE OF PRESCRIBED STUDIES FOR B.S. STUDENTS.**Freshman Year.**

	Sem.	Hrs.	Notes
English	6		
Foreign Language	12	1	
Mathematics	6	2	
Biology	one	8	5
Chemistry ...			
Physics	one	6-8	6
History and Bible ...			
Biology	one	2	3
Military Science ...			
Physical Training...			
		<hr/> 40-42	

Sophomore Year.

(For Major in Biology, Chemistry or Physics.)

	Sem.	Hrs.	Notes
English	4		
Foreign Language	6	4	
Philosophy	4		
Mathematics ...	three	6-8	8
Biology			
Chemistry ...			
Physics	one	2	3
Military Science ...			
Physical Training ...			
		<hr/> 36-38	

Sophomore Year.

(For Major in other Subjects.)

	Sem.	Hrs.	Notes
English	4		
Foreign Language	6	4	
Philosophy	4	7	
Political Science ...	one	6	
Economics			
Biology	one	8	8
Chemistry			
Physics			
Military Science ...	one	2	3
Physical Training ..			
Major subject or Elective		6	
		<hr/>	
		36	

Junior and Senior Years for A.B. and B.S. Students.

Major subject, Minor subject, and all electives approved by the Adviser, including all the requirements for the given degree not already fulfilled in the Freshman and Sophomore years, subject also to the limitations of the hours of enrollment.

NOTES ON THE SCHEDULES.

1. A student who enters without any foreign language will not be permitted to begin more than one Foreign Language in the Freshman year.

2. A student deficient in the prerequisite to Freshman Mathematics must take this prerequisite work in the Freshman year, postponing the regular Freshman Mathematics until the prerequisite is completed.

3. All male students, except those excused by the Medical Officer, are required to take either Military Science or Physical Training in the Freshman and Sophomore years. Those electing Military Science are required to continue it for two years (this is one of the requirements for graduation). Those excused from both Military Science and Physical Training will take an elective in the place of these 2 semester hours.

4. The Modern Language begun in the Freshman year must be continued thru the Sophomore year.

5. Students intending to take a major in Mathematics or Physics will naturally take Physics in the Freshman year. Pre-medical students and those intending to take a major in Biology or Chemistry will take Chemistry; other students may elect any one of the three sciences.

6. Pre-medical students and those intending to take a major in Biology will take Biology; all others are required to take History

and Bible in the Freshman year. Biology students will take History and Bible in the Junior year.

7. Biology and Pre-medical students will take Biology in the Sophomore year and may postpone the Philosophy until the Junior year.

8. See rule on page 32, prescribed work for B.S. degree, No. 8. Choice should be made in the Sophomore year between Biology Chemistry, Physics and Mathematics so as to conform to this rule.

COURSES UNDER THE MAJOR AND MINOR SYSTEM.

A variety of courses of study may be arranged under the different majors in the list on page 30, by the choice of minors and electives so as to meet a wide range of requirements of different students. Suggestions for a few such courses are given below.

CLASSICAL COURSE.

Those desiring to pursue a course similar to the old Classical Course will follow the Freshman and Sophomore schedules on page 32 for A.B. and then select a major in Greek or Latin (and a minor in Latin or Greek). Ministerial students, i. e., those who enter the college with the intention of preparing for the Christian ministry, are urged to take this course.

COURSES IN PREPARATION FOR TECHNICAL POSITIONS.

Besides the courses in Industrial, Civil, Mechanical, and Electrical Engineering, intended to fit men for technical and industrial positions in those lines, courses may be arranged with Chemistry as a major, which will well prepare men to fill the many positions in industrial or applied chemistry; or courses with Physics as a major, which will prepare for similar positions in applied physics.

PRE-MEDICAL COURSE.

The following course, with a major in Biology, is advised for those students who desire to prepare for entrance to a medical school: Two years of Biology, two years of Chemistry and one year of Physics are included in the first two years of this course. If a student can offer for entrance an elementary course of Chemistry satisfactory to the Department of Chemistry, it may be possible for the student to take the second year of Chemistry in the Freshman year and Organic Chemistry in the Sophomore year, and thus in two years satisfy the requirements of those medical colleges which require but two years of college work for entrance,

including two years each of Biology and Chemistry (including Organic Chemistry), and one year of Physics. Certificates of work completed will be given students desiring them at the end of the second year.

Freshman Year.

	Sem. Hrs.
English	6
Foreign Language (including Latin)	12
Mathematics	6
Biology	8
Chemistry	8
Military Science ...	} one..... 2
Physical Training ..	
	—
	42

Sophomore Year.

	Sem. Hrs.
English	4
Foreign Language	6
Philosophy	4
Biology	8
Chemistry	6
Physics	8
Military Science ..	} one..... 2
Physical Training ..	
	—
	38

Junior Year.

	Sem. Hrs.
Chemistry	9
Physics	8
History and Bible	6
Biology	8
	—
	31

Senior Year.

	Sem. Hrs.
Economics or Political Science	6
Philosophy	2
Hygiene	2
Electives	18
	—
	28

COURSES FOR PROSPECTIVE TEACHERS.

A student preparing to teach should choose as his major the subject he prefers to teach and expects to teach. He should choose as his minor the subject that would be his second choice in case there is no opening in the field of his major subject at the time he goes out to teach. His electives should include subjects for general cultural training and as much work in Education as is possible. He should see that he at least satisfies the school code requirements of the State in which he expects to teach.

A student intending to prepare for executive positions in the educational world (superintendencies, principalships, etc.), should choose Education as his major subject. He will receive either the A.B. or B.S. degree, depending upon the choice of the rest of his work. He should also see that he meets the requirements of the state in which he expects to do his work. In order to be certificated for teaching a subject in Pennsylvania, at least 12 semester hours in that subject are required. The student should see to it that he meets that regulation, in at least two of the subjects he prefers to teach.

The following courses are suggested:

Freshman Year.

	Sem. Hrs.	
	A.B.	B.S.
English	6	6
Latin	6	
Foreign Language*†	6	12
Mathematics	6	6
Chemistry	8	8
U. S. History and Bible	6	6
Military Science ..	2	2
Physical Training ..		
	—	—
	40	40

*One Foreign Language begun in the Freshman year must be continued thru the Sophomore year.

†Those students who intend, after graduation from college, to work for the degree of Ph.D. at a university should take at least 2 years of German and 2 years of French in college.

Sophomore Year.

	Sem. Hrs.	
	A.B.	B.S.
English	4	4
Latin	6	
Foreign Language	6	6
General Psychology	2	2
Introduction to Philosophy	2	2
Physics	8	8
Political Science ..	} one.....	6
Economics		
Military Science ..	} one.....	2
Physical Training ..		
Electives†	4	6
	<hr/> 34	<hr/> 36

Junior Year.

	Sem. Hrs.	
	A.B.	B.S.
Biology	8	8
Introduction to Teaching	3	3
History of Education, General	3	3
History of Education, U. S.	3	3
Secondary Education	3	3
Educational Psychology	3	3
Philosophy of Education	3	3
Electives§	6	4
	<hr/> 32	<hr/> 30

Senior Year.

	Sem. Hrs.	
	A.B.	B.S.
Methods of Teaching	3	3
School Administration	3	3
Practice Teaching	6	6
Electives*	18	18
	<hr/> 30	<hr/> 30

†If the student has not had Accounting Practice, it is suggested that this be taken as an elective.

§Public Speaking, Logic, Ethics, Military Science, are suggested as electives.

*Personal and Public Hygiene, Sociology, Experimental Psychology, Military Science are suggested as electives.

PRESCRIBED TECHNICAL COURSES

BUSINESS ADMINISTRATION COURSE.

Entrance requirements: English, 3 units; Mathematics, 2 units; two units in each of two foreign languages; and sufficient electives to make a total of 15 units.

This course is intended primarily for students who wish to prepare for a business career, and emphasis is laid upon the general principles underlying all lines of business. It is also designed for those who intend to enter law or the public service, and generally to form the basis, and provide the outlook, for a life of activity and leadership in community affairs.

The course leads to the degree of Bachelor of Science in Business Administration. Required for graduation: 136 semester hours, 80 of which must be passed with a grade of C or better.

Freshman Year.

	Sem. Hrs.
English	6
Foreign Language	6
History and Bible	6
Advanced Algebra	3
Commercial Algebra	3
Chemistry	} one.....
Physics	
Biology	
Accounting Practice	4
Military Science	} one.....
Physical Training	
	—
	38

Sophomore Year.

	Sem. Hrs.
English	4
Foreign Language	6
Psychology	2
Introduction to Philosophy	2
Insurance	3
Statistics	3
American Government and Politics	6
Principles of Economics	6
Military Science	} one.....
Physical Training	
	—
	34

Junior Year.

	Sem.	Hrs.
Foreign Language	6	6
United States History	6	6
Sociology	2	2
Ethics	2	2
Municipal Government*	3	3
European Governments*	3	3
Money and Banking	3	3
Business Law	3	3
Resources and Industries	3	3
Labor Problems	3	3
	—	34

Senior Year.

	Sem.	Hrs.
Corporation Finance	3	3
Corporation Law	3	3
Business Management	3	3
Railway Transportation	3	3
Electives	18	18
	—	30

ENGINEERING COURSES.

For entrance requirements see page 82.

Freshman Year.

	Sem.	Hrs.
English	6	6
Foreign Language	6	6
Mathematics	8	8
History and Bible	6	6
Chemistry	8	8
Engineering:		
Mechanical Drawing	2	2
Surveying	5	5
General Engineering	1	1
Military Science ... {	one	2
Physical Training .. {	one	2
	—	44

*Or Constitutional Law and International Law, given alternate years.

Sophomore Year.

	Sem.	Hrs.
English	4	
Mathematics*	6	
Physics	8	
Economics	6	
Engineering:		
Descriptive Geometry	2	
Mechanical Drawing	2	
Mechanics	6	
Military Science ... {one.....	2	
Physical Training ..		
	—	
		36

Junior Year.

	Sem.	Hrs.
Philosophy	4	
Physics	8	
Military Science (Elective)†	4	
Engineering:		
Elements of Electrical Engineering	5	
Thermodynamics	3	

And in addition, for the different courses in Engineering:

CIVIL ENGINEERING:

	Sem.	Hrs.
Mineralogy	4	
Engineering:		
Materials	5	
Structural Design A, B.	6	
Hydraulics	3	
Engineering Society	2	
	—	
		40

*All Engineering students take Calculus thruout the Sophomore year, except those in Industrial Engineering who take one semester of Calculus and one of Investment Mathematics.

†Engineering students are allowed to elect Military Science in the Junior and Senior years regardless of any limitations of hours of enrollment.

INDUSTRIAL ENGINEERING:

	Sem. Hrs.
Economics:	
Business Law	6
Money and Banking	6
Labor Problems	6
Resources and Industries.	6
Engineering:	
Heat Power	3
Engineering Society	2
	<hr/>
	37

MECHANICAL-ELECTRICAL ENGINEERING:

	Sem. Hrs.
Engineering:	
Kinematics	3
Shop Work	4
Materials	5
Heat Power	3
Hydraulics	3
Machine Design	2
Engineering Society	2
	<hr/>
	42

Senior Year.

CIVIL ENGINEERING.

	Sem. Hrs
Geology	2
Astronomy and Geodesy	3
Railroads	3
Structural Design, C, D	6
Structural Drafting	2
Highways	3
Sewerage	3
Business Law	3
Engineering Specifications	3
Engineering Society	2
Elective	4
	<hr/>
	32

MECHANICAL ENGINEERING.

	Sem.	Hrs.
Engineering Specifications	3	3
Machine Design	6	6
Heat Power	3	3
Power Plant Design	3	3
Structural Design, A, B	4	4
Mechanical Laboratory	1	1
Business Law	3	3
Engineering Society	2	2
Heating and Ventilation	3	3
Elective	4	4
	—	32

INDUSTRIAL ENGINEERING.

	Sem.	Hrs.
Economics :		
Corporation Finance	6	6
Accounting Principles	6	6
Business Management ...	6	6
Railway Transportation ..	6	6
Structural Design, A, B	4	4
Industrial Economics	6	6
Engineering Specifications	3	3
Heat Power	3	3
Power Plant Design	3	3
Engineering Society	2	2
	—	33

ELECTRICAL ENGINEERING.

	Sem.	Hrs.
Engineering Specifications	3	3
Telephone	2	2
Heat Power	3	3
Electrical Machinery	7	7
Electrical Characteristics	3	3
Mechanical Laboratory	1	1
Business Law	3	3
Engineering Society	2	2
Power Plant Design	3	3
Elective	2	2
Electrical Laboratory	3	3
	—	32

In order to obtain the degree of Bachelor of Science in any of the Engineering courses, the student must have completed satisfactorily the total work and semester hours as scheduled above, and make a grade of C or better in 80 or more semester hours.

THE MASTER'S DEGREE

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS.

In applying for admission as a candidate for the degree of Master of Arts, the applicant must present (a) evidence of a good moral character, and (b) a certificate showing that he has obtained the degree of Bachelor of Arts in a standard college or university. No student shall be allowed to do work leading toward the Master's degree until his undergraduate work has been completed and he has been recommended by the Faculty for the Bachelor's degree. He must further designate the subject or subjects he wishes to pursue, in harmony with the major and minor system. Upon the approval of his credentials and choice of studies by the Committee on Advanced Degrees, and the payment of the registration fee (\$5.00), the applicant may be admitted by the Faculty as a candidate for the degree. The degree of Master of Arts will be conferred upon the candidate after the satisfactory completion of twenty-four semester hours of advanced work in his studies, as certified by the Registrar, including the writing of an approved essay in his major subject. The essay becomes the property of the College. The professor in charge of the major subject is the candidate's adviser until the degree is obtained.

No application for admission will be received after October 15 of each year. Persons who have registered for work leading towards the Master's degree are required to enroll by giving written notice to the Registrar at the beginning of each year until their work has been completed. Failure to so do will result in removal of their names from the college roll.

REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE.

The degree of Master of Science will be conferred upon the same conditions as the degree of Master of Arts, except that the candidate must have received the degree of Bachelor of Science.

COURSES OF INSTRUCTION.

ENGLISH.

Professor Hagen, Professor Cline, Mr. Albig, and Mr. Klett.

A Major in English includes Courses 1, 2 (A, B), 3, 4, and 7, or 8 or 9.

A. English Composition.—This course consists of practice in writing exposition, argument, description, and narration, in long and short themes, and in letters; with the parallel study of specimens, and of the principles of rhetoric as they apply to writing. Lectures, recitations, written exercises in the class-room and outside, and personal conferences.

Required course for all Freshmen. Three periods thruout the year. Credit of six semester hours.

Prerequisite: 3 units of entrance English.

1. English Literature.—This course consists of a survey of English Literature from "Beowulf" to Kipling.

Required course for all Sophomores. Two periods thruout the year. Credit of four semester hours.

2 A. Shakespeare.—Careful study of half a dozen of the plays, with the more rapid reading of others, selected and arranged so as to give the student an insight into the development of Shakespeare's mind and art.

Junior course. Three periods, first semester. Credit of three semester hours.

2 B. Victorian Poetry.—A study of the poets of the Victorian period, with special attention to Tennyson and Browning.

Junior course. Three periods, second semester. Credit of three semester hours.

- 3. English Novel and Short Story.**—A survey of the growth of the novel in structure and content, and a study of the history, principles, and structure of the short story. Lectures, collateral reading of representative novels and short stories, class discussions, reports, and personal conferences.

Senior course. Two periods thruout the year. Credit of four semester hours.

- 4. Anglo Saxon.**—An introductory course including the study of the elementary principles of the grammar and the reading of representative selections from Anglo-Saxon literature.

Junior and Senior course. Two periods thruout the year. Credit of four semester hours.

- 6. Argumentation and Debating.**—A study of the substance and the forms of argumentative discourse, written and spoken; involving the principles of inductive and deductive logic, of sound and fallacious reasoning, of evidence, of the selection and use of materials, and of the best forensic and platform practice.

Elective course open to members of class and college debating teams; and to qualified Juniors and Seniors. Two periods, first semester. Credit of two semester hours.

- 7. American Poets.**—An intensive study of the chief American poets from William Cullen Bryant to Sidney Lanier.

Elective course for all qualified students. Three periods, first semester. Credit of three semester hours.

- 8. Elizabethan Dramatists.**—The plays of leading dramatists of the Elizabethan Era, excluding Shakespeare, will be studied and reported on in class.

Elective course for all qualified students. Three periods, second semester. Credit of three semester hours.

- 9. The Romantic Movement.**—A study of the origin and development of romanticism, with special reference to Wordsworth, Shelley, and Keats.

Elective course for all qualified students. Three periods, second semester. Credit of three semester hours.

GERMAN.

Professor Grimm, Mr. Lawyer, and Mr. McAllister.

A Major in German includes Courses 1, 2, 3, 5, 6.

- A. Elementary German.**—A course for beginners. The essentials

of grammar; reading of simple prose and poetry; written and oral exercises.

Three periods thruout the year. Credit of six semester hours.

1. **Intermediate German.**—Reading of modern standard prose; review and continuation of grammar; written and oral exercises; private reading may be required.

Three periods thruout the year. Credit of six semester hours.

Prerequisite: 2 units of entrance German or Course A.

2. **Lyric and Epic.**—Reading and interpretation of German lyric and epic poetry; collateral reading is required.

Three periods thruout the year. Credit of six semester hours.

Prerequisite: Courses A and 1; at the discretion of the instructor students who have passed Course A with a grade A or B may also be admitted.

3. **Drama.**—A study of the German drama, with special reference to Lessing, Schiller, Goethe, and the drama of the nineteenth century; collateral reading is required.

Three periods thruout the year. Credit of six semester hours.

Prerequisites: Courses A and 1, and preferably also Course 2.

4. **Luther.**—An advanced course devoted to the study of selections from Luther's German writings.

One period thruout the year. Credit of two semester hours.

5. **Composition and Conversation.**—An advanced course in the practice of speaking and writing German, including practice in writing letters.

One period thruout the year. Credit of two semester hours.

6. **Linguistic Science.**—A study of the principles of linguistic science, with special reference to the German. Lectures; Prokosch, Sounds and History of the German Language, supplemented by collateral reading; methods of teaching German.

One period thruout the year. Credit of two semester hours.

7. **German Scientific Prose.**—Subjects in natural science. The course is arranged primarily for students in the Science

Departments and the Engineering Courses who have taken Courses A and I or their equivalents.

Two (or three) periods thruout the year. Credit of four (or six) semester hours.

8. Scientific and Technical German.—This course may be offered to students in the Engineering Courses who have not had the preparation required for admission to Course 7.

Hours and credits to be arranged.

Deutscher Verein.—Opportunity for more extended German conversation and study may be offered to advanced students in a voluntary German club.

GREEK.

Professor Billheimer.

A Major in Greek includes Courses 1, 2, 3, and 3 hours chosen from Courses 4-7.

A. First Year Greek.—An elementary course for beginners.

Three periods thruout the year. Credit of six semester hours.

B. Second Year Greek.—A course for those who have taken First Year Greek. Selections from prose authors.

Three periods thruout the year. Credit of six semester hours.

1. Cebes.—The "Tablet" will be reproduced by the students in drawing. Prose composition.

Freshman course. Three periods, first semester. Credit of three semester hours.

2. Lucian.—Selected dialogues. Prose composition.

Freshman course. Three periods, second semester. Credit of three semester hours.

3. Plato.—"Apology," and "Crito." Individual reports will be made on the life and work of Socrates.

Sophomore course. Three periods, first semester. Credit of three semester hours.

4. **Greek History.**—A survey of the history of Greece from the earliest times to the death of Alexander the Great. The study of the history of this period will be accompanied by an examination of the early archaeological remains and by the reading of selections from the literary and epigraphical sources. Reports on special subjects will be made by members of the class.

Sophomore course. Three periods second semester. Credit of three semester hours.

5. **Demosthenes.**—The "First Philippic" and the "Olynthiacs." Oxford text. The students prepare grammatical and historical notes for each oration.

Junior and Senior course. Three periods, first semester. Credit of three semester hours.

6. **New Testament.**—The Gospel of John, and selections from other books.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

7. **Euripides.**—This course will give a practical introduction to Greek metrics, and will include the history of Greek Tragedy and of the Greek Theatre.

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

8. **Greek Authors in English Translations.**

Junior and Senior course. Hours and credit as arranged.

9. **Sight Translation in the New Testament.**

Junior and Senior course. Hours and credit as arranged.

LATIN.

Professor Biklé.

A Major in Latin includes Courses 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 (or 11), 12 (or 13).

Allen and Greenough's "Latin Grammar" and Harper's "Latin Lexicon" are recommended. Of the smaller dictionaries the stu-

dent is advised to get the "Elementary Latin Dictionary," by Charlton T. Lewis.

1. **Livy.**—Selections from Book I, and the Hannibalian War in Books XXI and XXII. Special attention is given the syntax and Livy's peculiarities of style. Collateral reading on the Punic Wars, and lectures on Rome and Carthage.

Freshman course. Three periods during the first semester up to the Christmas vacation. Credit of two semester hours.

Prerequisite: 4 units of entrance Latin.

2. **Horace.**—Selections from the "Odes," including a critical interpretation with special attention to the Horatian meters and the mythological and historical allusions of the text. Berens' "Hand-Book of Mythology" is recommended. Collateral reading on Horace as a lyric poet.

Freshman course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

3. **Cicero.**—The "De Senectute" will be read, with thoro drill in syntax, special attention being given to the mode uses of the Latin Subjunctive.

Freshman course. Three periods from the last of March to the close of the academic year. Credit of two semester hours.

Note. During part of the Freshman year there will be, in connection with the reading of the Latin text, drill in Latin Prose Composition, embracing a rapid review of Latin syntax, with oral and written practice in the principles involved.

4. **Cicero.**—The "Amicitia" or the "De Natura Decorum." Rigid drill in syntax will be continued, with training in reading the Latin text with expression. Collateral reading of the life and times of Cicero. Informal lectures on Cicero's philosophical views.

Sophomore course. Three periods a week during the first semester up to the Christmas vacation. Credit of two semester hours.

5. **Horace.**—"Satires," and the "De Arte Poetica." After the study of some selected satires the "Ars Poetica" is read, and each student is required to prepare a written analysis of

the poem. There is a review of the dactylic hexameter versification.

Sophomore course. Three periods from the beginning of January to the last of March. Credit of two semester hours.

- 6. Tacitus.**—The “Agricola,” or selections from the “Annals.” Along with the translation of the text there will be a study of the times in relation to the literature of this period, and special attention will be given to the characteristics of the Silver Age Latinity.

Sophomore course. Three periods from the last of March to the close of the year. Credit of two semester hours.

- 7. Quintilian.**—Tenth Book of the “Institutes.” The student is required to make a close study of the terms used by Quintilian in literary criticism, and to make a summary and classification of the Greek and Roman authors.

Junior course. Two periods during the first semester to the Christmas vacation. With course 8, credit of four semester hours..

- 8. Juvenal.**—Selected Satires. With full explanations of the text and collateral reading on the private and social life of the Romans of the Empire. Followed by a short course in Roman Antiquities.

Junior course. Two periods from the beginning of January to the close of the college year. With course 7, credit of four semester hours.

- 9. Terence or Plautus.**—The “Andria” of Terence or the “Captivi” of Plautus. The dramatis personae are assigned to special members of the class and the parts are rendered both in Latin and English. Informal lectures on the Roman theatre; also on the origin and development of the Latin drama, and the value of the Roman comedy to the philologist and the student of Roman life.

Senior course. Two periods for ten weeks. With courses 10 or 11, and 12 or 13, credit of four semester hours.

- 10. Latin Literature.**—A course of lectures embracing a general survey of the whole field, and aiming to trace the rise and subsequent development of the various kinds of prose and verse among the Romans, with special attention to the writers of the Golden and Silver Ages. Or, —

- 11. Roman History**—A course of lectures covering the period from 150 B. C. to 100 A. D.

Senior course. Two periods for eight weeks. With courses 9 and 12, credit of four semester hours.

- 12 Roman Law**.—Morey's "Outlines" is the chief text-book. After a careful study of the historical development and content of Roman Law, a paper is required from each member of the class on a subject assigned for special investigation. Or, —

- 13. Roman Constitutional History**.—The subject is pursued with the aid of a text-book

Senior course. Two periods for seventeen weeks. With courses 9 and 10, or 11, credit of four semester hours.

ROMANCE LANGUAGES.

Professor Sehrt, Mr. Lovell, and Mr. Hamme.

A Major in French or Spanish includes Courses 1, 2, 3, 5 and 6.

French.

- A. Elementary Course**.—Fraser and Squair's "Complete French Grammar," Part I. Translation.

Three periods thruout the year. Credit of six semester hours.

- 1. Intermediate Course**.—Fraser and Squair's "Complete French Grammar," Part II. Reading of a number of Modern French authors.

Prerequisite: 2 units of entrance French or Course A.

- 2. French Literature of the 17th Century**.—Two plays each by Molière, Corneille, and Racine. Selections from French prose writers of the 17th century.

Three periods thruout the year. Credit of six semester hours.

- 3. French Literature of the 19th Century**. Selections from Chateaubriand, Hugo, Lamartine, de Musset, de Vigny, Balzac,

Sainte-Beuve, Flaubert, Daudet, Zola, Maupassant, Bourget, Anatole France and others.

Three periods thruout the year. Credit of six semester hours.

- 4. Old French Language and Literature.**—This course is especially designed for those who expect to teach French. Selections from Bartsch's "Chrestomathie De L'ancien Français" will be read.

Two periods thruout the year. Credit of four semester hours.

- 5. History of French Literature.**—Reports and private reading. *One period thruout the year. Credit of two semester hours.*

- 6. Advanced Composition.**

One period thruout the year. Credit of two semester hours.

Spanish.

- A. Elementary Course.**—Grammar: Cherubini's "Curso Práctico de Español para Principiantes." Translation.

Three periods thruout the year. Credit of six semester hours.

- 1. Intermediate Course.**—Hills and Ford's "Spanish Grammar." Reading of Modern Spanish authors.

Three periods thruout the year. Credit of six semester hours.

- 2. Spanish Literature of the 16-17th Centuries.**—Selections from Cervantes and at least one play each by Lope de Vega and Calderón. History of Spanish Literature.

Three periods thruout the year. Credit of six semester hours.

- 3. Contemporary Spanish Literature.**

Three periods thruout the year. Credit of six semester hours.

- 4. Old Spanish Language and Literature.**—This course is especially designed for those who expect to teach Spanish. The selections in Ford's "Old Spanish Readings" will be made the subject of special study.

Two periods thruout the year. Credit of four semester hours.

- 5. Commercial Spanish.**

Two periods thruout the year. Credit of four semester hours.

6. Advanced Composition.

One period thruout the year. Credit of two semester hours.

ENGLISH BIBLE.

Professor Valentine and Mr. Stamm.

- 1. General Introduction to the English Bible.**—The progress of revelation in the Scriptures is followed in its historical development from the origins of the Hebrew people to the close of the Apostolic Age.

Freshman Course. Two periods, first semester. Credit of two semester hours.

- 2. Old Testament Books.**—A survey of various books with a view to their history and message.

Open to Sophomores, Juniors and Seniors. Two periods, first semester. Credit of two semester hours.

- 3. Early Oriental Civilizations.**—The history of the great ancient empires and peoples, with special reference to their relation to Bible History.

Open to Sophomores, Juniors and Seniors. Two periods, first semester. Credit of two semester hours.

- 4. Between the Testaments.**—History of the period following the Return from Captivity to the fall of Jerusalem, affording a background for a study of the New Testament.

Open to Sophomores, Juniors and Seniors. Two periods, first semester. Credit of two semester hours.

- 5. Literary Study of the Bible.**—The Bible as Literature. A study of its literary forms as a guide to appreciation of its inward spirit.

Sophomore course. One period, first semester. Credit of one semester hour.

- 6. Evidences of Christianity.**—A study of the evidences of the presence and action in the world of a supernatural redemptive power as these appear in the first Christian documents, and in Christian history, and dealing with the per-

plexing questions which arise in the effort to intellectualize the content of the Christian revelation.

Junior course. Two periods, first semester. Credit of two semester hours.

7. New Testament Books.—A survey of selected books with a view to their history and message.

Open to Sophomores, Juniors and Seniors. Two periods, second semester. Credit of two semester hours.

8. Life of Christ.—Beginning with a study of the external aspects of Christ's life as it presented itself to those who witnessed it, the effort is made to penetrate to the inner meaning, and reason backwards from effects to cause.

Open to Juniors and Seniors. Two periods, second semester. Credit of two semester hours.

9. Biblical Archaeology.—A study of the archaeological discoveries that shed light on Bible events and times.

Open to Juniors and Seniors. Three periods, second semester. Credit of three semester hours.

10. Social Teachings of Jesus.—A course on the bearing of Christ's teachings on society, and on men's relations and duties as members of society.

Open to Junior and Seniors. Two periods, second semester. Credit of two semester hours.

11. History of Religions.—A survey of the history and content of the great ethnic religions, with a view to their comparison with Christianity.

Open to Juniors and Seniors. Two periods, second semester. Credit of two semester hours.

12. New Testament Greek.—See Greek 6.

HISTORY.

Professor Valentine, Mr. Stamm, and Mr. Klett.

A Major in History includes Courses 1, 2, 3 and 4.

1. Political History of Modern Europe.—With the political and industrial revolutions of the eighteenth century as back-

ground the progress of subsequent European development is studied, with the special view of enabling the student to understand contemporary events and movements by thus connecting them with their proximate origins.

Freshman course. Two periods each semester. Credit of four semester hours.

- 2. English History.**—A study of the English people from the earliest times to the present.

Sophomore course. Two periods each semester. Credit of four semester hours.

- 3. United States History.**—Comprises a study of our national history, with the view of discerning the political, social, and economic forces that have been operative in the development of the republic.

Junior course. Three periods each semester. Credit of six semester hours.

- 4. The Renaissance and the Reformation.**—A study of the forces and conditions involved in the transition from the mediaeval to the modern world.

Senior course. Two periods each semester. Credit of four semester hours.

PHILOSOPHY.

Professor Sanders and Mr. Squires.

A Major in Philosophy includes Courses 1, 2, 3, 5, 6, 8, and an additional six semester hours chosen from the remaining courses in the Department of Philosophy. Education 2 may likewise be included in the Major in Philosophy.

- 1. Psychology.**—A course in general psychology which aims to acquaint the student with the phenomena of mind, the methods of psychological investigation, and the practical bearing of the various mental functions on the problems of ethics, pedagogy, etc.

Sophomore course. Two periods, first semester. Credit of two semester hours.

- 2. Introduction to Philosophy.**—The course in general psychology suggests the problems of philosophy. The course in Introduction aims to acquaint the student with the content of philosophy, the origin and development of the various problems, the aim and method of philosophy, the results which have been attained, and its relation to the other departments of human thought.

Sophomore course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

- 3. Logic.**—An introductory course in the laws of thought. The evolution of the concept, its development into judgment and inference, the systematic function of classification, the explanatory function of generalization, and the methodology of proof and investigation are studied with a view to securing a foundation for the theory of knowledge and effective scientific method.

Junior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Course 1.

- 4. Sociology.**—A study of the nature of society and its problems. Starting with the psychological factors of sociation, the development of social institutions, the economic and cultural factors of social progress, and the elimination of hindrances, evils are taken up in turn with a view to an understanding of the methods of social improvement.

Junior and Senior course. Two periods, first semester, Credit of two semester hours.

Prerequisite, Course 1.

- 5. Ethics.**—A study of human conduct. The concept of personality and the idea of self-realization, as forming the background of moral judgment, are wrought into a system which explains the origin of the moral motives as well as their implication of God and immortality.

Junior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Course 1.

6. History of Philosophy.

A. Ancient and Medieval Period.—This course traces the rise and progress of reflective thought as it appears among the Greeks and culminates in Scholasticism. Special stress is placed upon the Greek thinkers, with a view to acquiring an understanding of the spirit of philosophy.

Senior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, and 3.

B. Modern Period.—This course covers the period from the Renaissance to the present time. Special stress is placed upon the great systems. The student is required to read selections from the great thinkers and report on them, the constant aim being to cultivate the philosophizing attitude, thus furnishing a basis for independent thought as well as an inspiration to do original thinking.

Senior course. Three periods, second semester. Credit of three semester hours.

Prerequisite, Courses 1, 2, 3, and 6 A.

7. Philosophy of Religion.—A study of religion as a distinct factor in human development. The aim of the course is to show the nature of religion and to interpret the various forms in which it manifests itself.

Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

8. Metaphysics.—Beginning with the method of system building, the student is introduced to the meaning of a world-view, the factors which a comprehensive and consistent view must recognize, and the reasons for regarding Theism as the theory which best meets existing requirements.

Senior course. Two periods, second semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, 3, 5, and 6.

9. Epistemology.—A study of epistemology investigating the principles of science with a view to understanding their origin, their validity, and their philosophical implications.

Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Courses 1, 2, and 3.

- 10. Experimental Psychology.**—This is an elementary laboratory course in psychology, covering the most essential features in the experimental method.

Senior and Junior course. Five laboratory periods, second semester. Credit of two and one-half semester hours.

Prerequisite, Philosophy 1.

- 11. Adolescent Psychology.**—A study of the psychology of adolescence with chief stress on the high school age.

Junior and Senior course. Two periods first semester. Credit of two semester hours. Given 1923-24 and alternate years.

Prerequisite, Philosophy 1.

- 12. Applied Psychology.**—A course dealing with the applications of psychology in the fields of business, industry, education, medicine, law, etc.

Junior and Senior course. Two periods, first semester. Credit of two semester hours. Given 1922-23 and alternate years.

Prerequisite, Philosophy 1.

Teachers in the service may enroll for courses outside regular college schedule provided there is a sufficient number to justify a class. Extension courses may be arranged at accessible points outside of Gettysburg.

EDUCATION.

Professors Kramer and Sanders, and Mr. Squires.

A Major in Education includes Courses 1A, 2, 3, 5, 6, 9, 10, 11.

- 1A. History of Education (General).**—A study of the most important movements in the history of education and of the factors and personages instrumental in bringing about various steps in the long line of progress.

Sophomore and Junior course. Three periods, first semester. Credit of three semester hours.

- 1B. History of Education (United States).—**The development of Education in the United States furnishes the subject matter of this course. The interrelation between educational ideals and methods and the needs imposed by the development of colonial and national life and the more recent industrial development is followed very closely. The aim constantly kept in the foreground in these courses is to get a clear grasp of the ways in which the schools shape the destiny of civilization.

Sophomore and Junior course. Three periods, second semester. Credit of three semester hours.

- 2. Philosophy of Education.—**This course is an elaboration of the answer to the age old question "What is it to educate?" It is a systematic treatment of the aim of education, what determines the aim, the content-material and the principles governing the realization of this aim.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2, and Education 1.

- 3. School Organization and Administration.—**A study of the practical problems of school organization and administration. *Senior course. Three periods, second semester. Credit of three semester hours.*

Prerequisite, Philosophy 1 and 2, and Education 1.

- 4. Secondary Education.—**A study of the principles and problems of the secondary school. The course is intended for those who are looking forward to High School and Superintendency positions.

Junior and Senior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2.

- 5. Educational Psychology.—**This course deals with the psychology of learning, methods of mental measurement, memory and intelligence tests, treatment of precocity and deficiency, &c.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2.

6. Methods.—This course deals with methods of teaching in the High School.

Senior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and 2, and Education 1.

7. Sunday School Pedagogy.—This course deals with the organization, equipment, administration of the Sunday School; curricula, courses of study, text books, psychology of the pupils, methods of teaching in the various departments, etc. Considerable supplementary reading and observation work are required.

Junior and Senior course. Two periods, first semester. Credit of two semester hours.

Prerequisite, Philosophy 1.

8. Seminar in Experimental Research.—The course deals with developing a valid procedure for the experimental determination of controverted questions in methods of teaching. Each student is expected to choose a real problem of the school room, develop procedure, and actually test it out in the class room.

Graduate course for teachers. Two periods, first semester. Credit of two semester hours. Given 1923-24 and alternate years.

9. Comparative Education.—A comparative study of the school systems of the United States, France, Great Britain, Germany, and Denmark.

Graduate course. Three periods, first semester. Credit of three semester hours. Given 1922-23 and alternate years.

10. Introduction to High School Teaching.—This is an introductory course to the field of teaching, covering such fundamental topics as aim, purpose, methods, discipline, organization, etc., of the American public high school.

Junior course. Three periods, first semester. Credit of three semester hours.

- 11. Student Teaching.**—This course will require observation, participation, and actual teaching for one hour a day for the five school days, with one hour a week of conference in connection therewith. The observation, participation and practice teaching will be done in the appropriate field, in a secondary school, under the direction of the teacher in charge, to meet the requirements of the State of Pennsylvania.

Senior course. Six periods, first or second semester. Credit of six semester hours.

- 12. Educational Sociology.**—This course aims to acquaint the student with the social function of education together with the needs out of which the educational program arises..

Junior and Senior course alternating with Course 2, second semester. Credit of three semester hours. Given 1922-23.

- 13. Seminar in Present Day Educational Topics.**—A course involving the reading of current educational periodicals, reports and discussions.

Senior course. One and a half periods thruout the year. Credit of three semester hours.

- 14. Educational Measurements.**—(a) Measuring the results of teaching. A study of the standardized tests and scales in general use, the technique of giving and scoring them, interpretation of results, and the application to school problems. (b) Measurement of intelligence. A study of the means and methods of determining the intelligence level of school children by individual and group tests, scoring, interpreting the tests, and applying them to school problems.

Senior course. Three periods, first semester. Credit of three semester hours.

Prerequisite, Philosophy 1 and Education 5.

- 15. Guidance.** This course covers the various activities that have been known as Educational Guidance, Vocational Guid-

ance, Personal Guidance. Our State Department desires that the teachers be equipped to give personal advice and counsel to high school students. For this difficult task special training is necessary. It is the aim of this course to help teachers in service and prospective teachers to get a view of the field and as much information as possible so that they may advise and counsel wisely those who come under their charge. The course will also include such topics as Pupil Self-analysis, Intelligence Tests, Avocational and Recreational Guidance, Health Guidance, Moral and Social Guidance, Curriculum Guidance, Selecting Courses of Study, Community Guidance Programs, Guidance through Subject Instruction, Guidance as a Teacher Service and as a Profession.

- 16. Basic Principles of Education for Industrial Teachers.**—A course in the various phases of education, especially adapted to industrial teachers, dealing with the aims, psychology and methods, etc.

Extension course. Two periods. Credit of two semester hours.

Note.—The new Pennsylvania School Code requires of all teachers who desire the provisional State certificate, Courses 10, 11, 5, and two of the following: 1A, 1B, 2, 3, 4, 6, 8, 9, 12, 13, 14.

The permanent State certificate is issued upon three years of successful teaching experience in the appropriate field and the satisfactory completion of six semester hours of additional work of at least collegiate grade, one half of which should be professional and the remainder related to the subjects or subject fields in which the candidate is certified to teach, together with a teaching rating of "middle" or better.

Various departments will offer courses in methods. Consult head of Department of Education.

Any of the courses in Education or Psychology will be given on Saturdays or evenings, for teachers in service, if the number de-

siring the course justifies the undertaking. Consult Prof. Kramer. These courses can also be given as extension work in localities easily accessible from Gettysburg by train or automobile.

Inasmuch as many of our students in Education pursue graduate work, and many institutions require a Master's thesis, it is deemed wise to give our students some training in thesis writing. Every student taking 12 semester hours of Education or more, will be required to write a thesis on some educational topic chosen by himself and approved by the Department. The topic is to be submitted any time before February 1st and the thesis must be handed to the Department not later than May 1st. Credits will be withheld until the thesis requirement is met.

Gettysburg College has a Chapter of Kappa Phi Kappa, the honorary undergraduate educational fraternity. Membership is limited to upperclassmen definitely interested in teaching as a profession. Scholarship and leadership are the qualifications necessary.

ECONOMICS.

Professor Johnston, Mr. Gubitz, and Mr. Meckley.

A Major in Economics includes Course 1 and 12 semester hours chosen from Courses 2, 5, 6, 7, 8, 9, 11, 12.

A. Accounting Practice.—This course deals with the technique of accounting in produce and provision business, general merchandise and manufacturing business. Attention is given to cost analysis and other fundamental features of the subject. Double entry system.

Freshman course. Four hours of laboratory work per week thruout the year. Credit of four semester hours.

1. Principles of Economics.—A study of the conditions of national prosperity as wealth, competition, law, morals, and geographical situation. Analysis of the productive forces and industries of society. Exchange from angles of value, money, banking, marketing, and foreign commercial policy.

Under distribution are examined principles determining rate of wages, interest, rent, and profit. Rational consumption. Luxury. Taxation. Current social policies aiming at economic reform.

Sophomore course for all students, who may, however, take political Science 1 (American Government and Politics) instead. Three periods thruout the year. Credit of six semester hours.

Prerequisite for all other courses in Economics except Economics A.

2. Money and Banking.—An examination of the nature and functions of money. Theory of credit. Origin and development of banking. Domestic and foreign exchange. Bank currency. The clearing house. Commercial banking. Bank supervision. Federal Reserve System. Foreign banking systems.

Junior and Senior course. Three periods, first semester. Credit of three semester hours.

5 Business Law.—This course is designed to give the student a knowledge of the legal rights and obligations arising out of common business transactions. The fundamental laws pertaining to contracts, partnerships, corporations, negotiable instruments, sales, etc., are examined.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

6. Corporation Law.—A general course on the law of modern business corporations, including acquisition of the charter, legal powers, promotion, stock issue, by-laws, the qualification, powers, rights and liabilities of directors, stockholders' meetings, dividends, stock transfers, rights of creditors, and dissolution and reorganization. Case method chiefly used.

Junior and Senior course. Three periods, first semester. Credit of three semester hours.

7. Labor Problems.—A study of the relation of the employee to the employer, including such topics as woman and child labor, immigration, sweating system, poverty and unemployment, strikes and boycotts, labor organizations,

agencies of industrial peace, profit sharing, conciliation and arbitration, industrial education and labor laws.

*Junior and Senior course. Three periods, second semester.
Credit of three semester hours.*

- 8. Corporation Finance.**—A study of business structure in simple and compound forms as individual enterprise, partnership, joint stock company, corporation, combination trusts, community of interest organization, holding company and complete consolidation. Promotion, underwriting, reorganization and receivership. Public policy with reference to corporation and trust problems.

*Junior and Senior course. Three periods, second semester.
Credit of three semester hours.*

- 9. Railway Transportation.**—A survey of the development of transportation and a discussion of its social and economic influence. Railway problems in the United States. Methods of competition, combination, discrimination and investments. Stock watering and speculation. Government regulation. The problems after the war of federal administration and ownership of the railroads.

*Junior and Senior course. Three periods, second semester.
Credit of three semester hours.*

- 11. Resources and Industries of the United States.**—A historical and descriptive course emphasizing the economic factors in the expansion and progress of the United States and serving to give the student a concrete picture of the modern world of industry, including agriculture, manufacturing, industrial combinations, domestic and foreign commerce, currency and banking, labor organizations, etc.

*Junior and Senior course. Three periods, first semester.
Credit of three semester hours.*

- 12. Business Management.**—A descriptive and analytical study of the internal and external problems involved in the management of an industrial or mercantile establishment, having regard especially to the economic principles underlying location of the plant, organization of the administration, management of the personnel, systems of wage payment, shop control, and marketing of the product.

*Junior and Senior course. Three periods, first semester.
Credit of three semester hours.*

POLITICAL SCIENCE.

Professor Johnston.

A Major in Political Science includes Courses 1, 3, 4, 5, 7.

- 1. American Government and Politics.**—Colonial origins of American institutions. Evolution of Federal and State constitutions. Evolution of political issues. Development of party machinery. General features of federal and state government. Executive, legislature, and judiciary. Administration. Foreign affairs. Commerce Taxation and finance. State and municipal organization and functions. Local rural government.

Sophomore course for all students, who may, however, take Economics 1 (Principles of Economics) instead. Three periods thruout the year. Credit of six semester hours.

Prerequisite for other courses in Political Science.

- 3. European Governments.**—A study of the structure and function of European governments with constant reference to American federal and state governments.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

- 4. Constitutional Law.**—A study of the American Constitution viewed in the light of the Supreme Court decisions. This course is given for those who wish to make an extended study of the basic principles of United States Government.

Junior and Senior course. Three periods, first semester. Credit of three semester hours.

- 5. International Law.**—The development of the rules of international law, the rights and obligations of nations in times of war and peace, the settlement of international disputes are considered.

Junior and Senior course. Three periods, second semester. Credit of three semester hours.

- 7. Municipal Government.**—A description of the organization of municipal government in the United States including an account of the various organs, their relations to one another, the powers and responsibilities of legislative and administrative officials. An examination of commission and city manager plans of government.

Junior and Senior course. Three periods, first semester. Credit of three semester hours.

BIOLOGY.

Professor Skilliday.

A Major in Biology includes Courses 3, 4 (or 5), 6, 7 and 8.

1. **General Biology.**—A course designed to give the student a conception of the fundamental facts and theories of biological science. The course includes a study of such typical examples of plants and animals as are suitable to demonstrate the basic principles of structure and function of living organisms. The laboratory work includes, in addition to the study of specimens, instruction in simple methods of preparing material upon which the laboratory studies are made.

Freshman course. Three recitations and three two-hour laboratory periods each week, first semester. Credit of four semester hours.

Prerequisite for all other courses in the Department.

2. **Vertebrate Zoölogy.**—The course is based upon a careful laboratory study of representative forms of each class of the vertebrates, except mammals. Special emphasis is placed upon the comparative anatomy of the forms studied, the general physiological function of the organs, and the relationships existing among the various groups, based upon their evolutionary development.

Freshman course. Three recitations and three two-hour laboratory periods each week, second semester. Credit of four semester hours.

Prerequisite, Course 1.

3. **Anatomy.**—A course in comparative mammalian anatomy and the elements of human anatomy and physiology. The course is based upon a careful study of the human skeleton and a thoro dissection of a typical mammal, cat, or rabbit.

Sophomore course. Three recitations and three two-hour laboratory periods each week, first semester. Credit of four semester hours.

Prerequisite, Courses 1 and 2.

- 4. Embryology.**—A course demonstrating the principles of vertebrate embryology, based upon the frog, chick, and pig. The work includes laboratory studies of the histology of adult reproductive organs, development and maturation of sex cells, segmentation, development of the germ layers and organs, and the formation of the external form of the body. The laboratory work includes the study of prepared slides, the preparation of whole mounts of chick embryos, and the technique of preparing serial sections and their use.

Sophomore course. Three recitations and three two-hour laboratory periods each week, second semester. Course alternates with Histology; offered 1923-1924 and alternate years. Credit of four semester hours.

Prerequisite, Courses 1, 2, and 3.

- 5. Mammalian Histology.**—This is mainly a course in human histology, and wherever possible human tissues are used in the laboratory work. The work covers those structures ordinarily included in general histology, and includes a thoro study of the primary tissues and the main organs. Considerable time is given to the technique of slide preparation, from the living material to the finished slide. In addition to the slides prepared by himself, the student has access to the slide library containing several thousand slides.

Sophomore course. Three recitations and three two-hour laboratory periods each week, second semester. Course alternates with Embryology; offered 1922-1923 and alternate years. Credit of four semester hours.

Prerequisite, Courses 1, 2, and 3.

- 6. Botany.**—The course is intended to give the student an appreciation of the rôle of plants in nature, their general structures, physiological functions, and relations to man. The laboratory work includes the study of typical representatives of the main groups of plants, special attention being given to the bacteria, molds, and flowering plants. In field work the student becomes familiar with the forest trees of the community, and a herbarium of spring flowers is prepared.

Two recitations and two two-hour laboratory periods each week thruout the year. Credit of four semester hours.

Prerequisite, Course 1.

- 7. History of Biology.**—This course is designed to give the student an appreciation of the historical growth of biological science, and based upon this a clearer appreciation of the present status of our knowledge of the various biological fields of study. The course presupposes a knowledge of technical laboratory training in several biological sciences in order to follow the course profitably. The work is based upon Locy's "Biology and Its Makers." Work includes class exercises and library reading.

Three recitations each week, second semester. Credit of three semester hours.

Prerequisites, Courses 3, 4, 5, and 6, or equivalent.

- 8. Physiology.**—A course of instruction in the general physiology of the human body, dealing especially with the functions of Excretion, Digestion, Circulation, Respiration, and Reproduction. As a foundation for interpretation of general functions a study is made of selected microscopic slides showing the essential cellular structures of the main organs.

Three recitations and one two-hour laboratory period each week, first semester. Credit of four semester hours.

Prerequisites, Courses 2 and 3.

- 9. Biological Seminary.**—A course for advanced students and those preparing to teach. Work consists of reading and discussion of material appearing in the current journals, or reviews of recent books. Designed to familiarize the student with the use of scientific publications.

Elective course. Open to those who are able to pursue the course with profit. Amount of work and credit to be determined. Class meets alternate weeks thruout the year.

SANITATION AND HYGIENE.

Professor G. D. Stahley, M. D.

The service here offered consists of an elective course of weekly lectures, during the year, on the fundamental principles of Sanitation and Hygiene, for which a credit of two semester hours is given.

The Medical Director of the College also attends to the following duties: Brief courses of lectures on personal hygiene to the College Freshmen and Academy students; a weekly or semi-weekly sanitary inspection of all student rooms and dormitories; a personal supervision of attendance on required physical training for all non-R. O. T. C. Sophomores and Freshmen; a medical examination of all new students to ascertain physical defects; receiving sick reports from College and Academy students so as to insure prompt medical care; "supervision and control of all arrangements for keeping the swimming pool in the Y. M. C. A. building in a sanitary condition."

It is believed that these services are helpful in providing health education as well as maintaining good hygienic conditions in the student body.

CHEMISTRY.

Professors Breidenbaugh and Stover, Mr. Dickson and Assistants.

A Major in Chemistry includes Courses 1, 2, 3, 4, 7, 8.

The courses in chemistry are not designed to prepare specialists in any department of the subject, but to give a general training in the science. The successful completion of these courses will prepare the student to enter on graduate or professional studies in any leading university, or qualify him for a more successful pursuit of any technical business, or fit him to teach chemistry in secondary schools.

The instructors are in daily attendance during the college term from 8 to 12 and from 1 to 4 except on Saturday afternoons.

- 1. General Chemistry.**—No previous acquaintance with the subject is required. Those offering chemistry for admission will be allowed to substitute, as far as is best for the individual, from Course 2. The general principles and the fundamental laws of the science are included in the course, which consists of lectures, readings from approved textbooks—such as Remsen's "College Chemistry," Newell's "Inorganic Chemistry for Colleges," Kahlenberg's "Outlines of Chemistry"—and laboratory work for which careful record in note-books is required. There are daily quizzes

and frequent examinations. The last several weeks of the course are devoted to a practical review and examination in the determination of a certain number of substances, based on the results of previous study.

Three lectures and six laboratory hours weekly for one year. Credit of eight semester hours.

- 2. Qualitative Analysis.**—The student, following an outline prepared for the purpose, becomes acquainted with the general reactions of the elements of the several groups and from these data constructs the scheme of analysis which is applied in a number of determinations. There is constant supervision and personal conference over the work. Reference book, Fresenius' "Qualitative Analysis."

One lecture and nine laboratory hours weekly for one year. Credit of six semester hours.

Prerequisite, 1.

- 3. Quantitative Analysis.**—While such lectures as are desirable are given, this is essentially an individual laboratory course. An assigned minimum of work is required. Reference book, Fresenius' "Quantitative Analysis."

Nine hours of laboratory work weekly for one year. Credit of six semester hours.

Prerequisite, 1 and 2.

- 4. Organic Chemistry.**—Lectures and laboratory work. The laboratory work is partly preparations and partly the approximate analysis of animal and plant substance.

A. Three lectures weekly during the first semester. Credit of three semester hours.

B. Eighteen laboratory hours weekly during the year. Credit of six semester hours.

C. Nine laboratory hours weekly during the year. Credit of six semester hours.

Prerequisite, 1 and 2.

- 7. Special Quantitative Methods.**—Students who are qualified are offered courses in advanced and applied analysis—such as mineral, ore, and water analysis, the examination of food stuffs and manufactured articles.

Such hours as may be arranged for during Senior year, or during Junior year by such as have completed the other work in the department. Credit of six to ten semester hours.

- 8. Industrial Chemistry.**—A course of class-room exercises.
Three periods, second semester. Credit of three semester hours.
Prerequisite, 1, 2, and 3.

GEOLOGY AND MINERALOGY.

Professor Breidenbaugh.

- 1. Dynamical Geology.**—This course of lectures gives the student an acquaintance with the facts concerning inorganic geology, and a discussion of the dynamical agencies which have been operative in bringing the earth to the condition in which we now find it.

Field work and the preparation of papers from personal observation and practical application to the work. Frequent examinations are held.

Two periods, first semester. Credit of two semester hours.

- 2. Historical Geology.**—A comprehensive discussion of the principles of evolution, with illustrations from historic geology.

The student is assigned readings from the text-books of Dana, Le Conte, Chamberlain and Salisbury, and other authors.

Two periods, second semester. Credit of two semester hours.

- 3. Mineralogy.**—Following a short course of practical work in Crystallography, there is a series of determinations of not less than one hundred minerals by their physical and blow-pipe characteristics.

Two periods thruout the year. Credit of four semester hours.
Prerequisite, Chemistry 1.

MATHEMATICS.

Professor Arms, Mr. Wood, and Mr. Cessna.

A Major in Mathematics consists of at least eighteen hours, twelve of which must be chosen from the following:

Mathematics 6, 7, 8, 9, 10, 14. Mathematics 6 (Calculus) is required of all students majoring in Mathematics.

The courses in Mathematics are divided into Pure Mathematics and Commercial Mathematics, the latter being designed especially for those preparing for the work of a computer, statistician, accountant, or employee of an insurance company.

Six semester hours are required of all Freshmen. Since the available courses vary with the entrance Mathematics offered and with the intended major, the following table has been prepared for the guidance of Freshmen and their advisers.

Entrance Units	Intended Major.	Advised Freshman Math.	
		First Sem.	Sec. Sem.
1 or more in Alg.	Business Admin.	Math 2	Math. 11
1 in Alg., 1 in Geom.			
$\frac{1}{2}$ in Trig.	Engineering	Math. 1A	Math 4
1 in Alg., 1 in Com.		and 3A	
Arith.	Any	Math. 2	Math. 11
1 in Alg., 1 in Geom.	Any except		
	Math., or Phys.	Math. 1	Math. 2
1 in Alg., 1 in Geom.	Math. or Physics	Consult the Department	
1 in Alg., 1 in Geom.			
$\frac{1}{2}$ in Trig.	Any	Math. 3	Math. 5

Requirement 8A for the B.S. degree may be satisfied in part by one or two year-courses in Mathematics including six or twelve semester hours respectively chosen from Mathematics 3, 4, 5, 6, 10, 12, 13, 14.

PURE MATHEMATICS.

- 1. Plane Trigonometry and Algebra.**—Definitions and properties of the trigonometric functions; algebraic theory of exponents, theory and use of logarithms; solutions of triangles. *Three periods, first semester. Credit of three semester hours. Prerequisite: one unit of Algebra and one of Geometry.*

- 1A. Plane Trigonometry.**—A rapid survey of the essentials.

One period, or the equivalent, first semester. Credit of one semester hour. Required of Freshmen in Engineering who offer Trigonometry for entrance.

Prerequisite: one-half unit of Trigonometry.

2. Advanced Algebra.—Elementary theory of equations; complex numbers, binomial theorem.

Three periods, first semester, and repeated in the second. Credit of three semester hours. Required of Freshmen in Business Administration.

Prerequisite: one unit of Algebra.

3. Elementary Analysis.—For description and prerequisite see Mathematics 5.

Three periods, first semester. Credit of three semester hours.

3A. Analysis.—This course is designed primarily for Engineering students. For description and prerequisite see Mathematics 4.

Three periods or the equivalent, first semester. Credit of three semester hours. Required of Freshmen in Engineering.

Prerequisite: one unit of Algebra.

4. Analysis.—This together with Mathematics 3A is a unified course intended to introduce engineering students to the elements of college algebra, analytic geometry and calculus.

Four periods, second semester. Credit of four semester hours. Required of Freshmen in Engineering.

Prerequisite: Math. 3 A.

5. Elementary Analysis.—This together with Mathematics 3 is a unified course designed to introduce the student to the methods, aims, and uses of modern mathematics.

Three periods, second semester. Credit of three semester hours.

Prerequisite: One unit of Algebra, one of Geometry, and one-half of Trigonometry, or Math. 1 and 2.

6 Differential and Integral Calculus.—The fundamental formulae of differentiation with applications; series and the expansion of functions; the definite and the indefinite integral; applications, including areas and volumes. A. For Engineering students: lectures, recitations and quizzes. B. For others: problem solving on the laboratory plan with the

emphasis on original work. A minimum of attendance and content is prescribed.

Three periods thruout the year. Credit of three semester hours for each semester. Required of Sophomores in Engineering and students majoring in Mathematics. Sophomores in Industrial Engineering will take only the first semester.

Prerequisite: Math. 4 or 5.

- 7. Differential Equations.**—The theory and devices which will enable the student to integrate ordinary and partial differential equations.

Three periods thruout the year. Credit of six semester hours.

Prerequisite: Math. 6.

- 8. Modern Geometry.**—A choice from the following is offered to advanced undergraduate and graduate students; Analytic Geometry of Space, Projective Geometry, Foundations of Geometry.

Three periods during at least one semester. Credit of three or more semester hours.

Prerequisite: Math. 3 or 4.

- 9. Modern Analysis.**—A similar choice from: Higher Calculus, Theory of Functions.

Three periods during at least one semester. Credit of three or more semester hours.

Prerequisite: Math. 6.

- 10. Teachers' Course.**—The methods of teaching the secondary school subjects, the history of elementary mathematics, and practice teaching so far as is practicable.

Two periods thruout the year. Credit of two semester hours for each semester.

COMMERCIAL MATHEMATICS.

- 11. Commercial Algebra.**—An introduction to the mathematics of investment, including interest, discount, annuities, amortization, bond values, and sinking funds.

Three periods, second semester. Credit of three semester hours. Required of Freshmen in Business Administration.

Prerequisite: Math. 2.

- 12.. Insurance.**—The financial and legal principles of life-insurance, the computation of premiums and the valuation of policies.
Three periods, first semester. Credit of three semester hours.
- 13. Statistics.**—A first course in statistical method; the mean, mode, and median; deviations; applications to Biology, Education and Business.
Three periods, second semester. Credit of three semester hours.
- 14. Investments.**—Stock, bond, and investment accounting. The use of compound interest in bond valuation, building and loan associations and the preparation of amortization schedules.
Three periods, first semester. Credit of three semester hours.
Prerequisite: Math. 2 and Accounting Practice (or some experience in accounting).
- 15. Costs and Depreciation.**—Methods of charging depreciation and costs, the preparation of schedules, and an introduction to cost-accounting.
Three periods, second semester. Credit of three semester hours.
Prerequisite: Math. 2 and Accounting Practice.

PHYSICS.

Professor Parsons, Assistant Professor Miller, and Assistants.

Prerequisite: College Entrance Mathematics. Trigonometry is also strongly advised and is a prerequisite for all students continuing in Physics for more than one year.

Physics courses 1 and 2 below are prerequisite to all the courses which follow except course 12, Astronomy, and 3 and 4 are also prerequisites for all courses that follow except 11 and 12. For a Major in Physics at least 12 semester hours are required in Physics in addition to Courses 1, 2, 3, 4, and also Mathematics courses including usually Calculus and Differential Equations.

- 1. General Physics.**—Mechanics, properties of matter, sound, heat, electricity and magnetism, and light. Lectures and recitations.
Three hours per week thruout the year. Credit of six semester hours.

- 2. General Laboratory Physics.**—A laboratory course designed to accompany Course I.

Three or more hours per week thruout the year. Credit of two semester hours.

- 3A. Electricity and Magnetism and Mechanics.**—Including electro-chemistry, direct and alternating currents, and electrical machinery, and dynamics. For engineering students and others.

Three hours per week thruout the year. Credit of six semester hours.

- 4A. Electrical Measurements and Mechanics.**—Laboratory course designed to accompany 3A.

Three or more hours per week thruout the year. (One and two periods per week on alternate weeks). Credit of two semester hours.

- 3B. Electricity and Magnetism and Light, and Chemical Physics.**—

Lectures and Recitations. Theory and applications of electricity and magnetism, direct current machinery, electrochemistry, the theory of light, optical instruments, photography, X-rays, radioactivity, and other applications of physics to Chemistry and Biology.

Three hours per week thruout the year. Credit of six semester hours.

- 4B. Physical Measurements.**—Laboratory course designed to accompany 3B.

Three or more hours per week thruout the year. (One and two periods per week on alternate weeks). Credit of two semester hours.

- 7. Recent Advances in Physics.**—Radioactivity, discharge of electricity through gases, X-rays, photoelectricity, electron theory, electric waves, and other topics.

Two hours per week thruout the year. Credit of four semester hours.

- 8. Mathematical Physics.**—Lecture course in mathematical Physics for graduate students (or other advanced students). The topics treated may vary from year to year.

Such subjects as mechanics, hydrodynamics, the kinetic theory of sound, electricity and magnetism, physical optics, and the electro-magnetic theory, are treated.

Two or three lectures per week thruout the year.

Prerequisite, Physics 1-4, and Mathematics 7.

- 10. Advanced Laboratory Physics.**—This comprises all the advanced laboratory work not included in the preceding courses, and is designed for graduate students and others specializing in Physics. The experiments or problems assigned are variable and may include research on some assigned topic.

The course may be taken thru more than one year, credit being given proportional to the work done.

- 11. Physics Seminary.**—A meeting, for one hour a week thruout the year, of the advanced students, at which papers on assigned topics are presented, current topics are discussed, and reports given of recent work of investigators (obtained from reading the journals).

Credit of two semester hours.

- 12. Descriptive Astronomy.**—A course in general and descriptive astronomy (not mathematical). Text-book recitations, lectures, and some observatory work (observations of moon, planets, stars and nebula). Elective for all students.

Two hours per week, first semester. Credit of two semester hours.

STUCKENBERG LECTURESHIP.

Mrs. Mary G. Stuckenberg has given a fund of \$1,000 for the establishing of a Lectureship in Sociology in honor of her late husband, J. H. W. Stuckenberg, D.D., LL.D., by the terms of which the College will have annually a lecture on some phase of Sociology from the standpoint of Christian Ethics by specialists in this important field. The lecture is given at such a time as is convenient to the lecturer chosen for the year.

BELL LECTURESHIP.

A fund of \$2,100 from the estate of the late Rev. Peter G. Bell, ex-'60, has been received by the college for the establishment of a

Lectureship on The Claims of the Gospel Ministry on College Men. The main object of this foundation is "to keep before the students of the College the demand for men for the Christian ministry and the conditions of the age qualifying that demand."

s **COLLEGE LECTURE COURSE.**

The College Board of Trustees annually appropriate money sufficient for the securing of a number of the best scholars and speakers in the country to deliver lectures, usually one each month, to the whole student body on literary and scientific topics. Some are illustrated and all are free to the students and to the general public. The following lectures in this course were delivered during 1921-22.

Science in the Service of Man. Illustrated.

Wm. J. Showalter, Litt.D., Associate Editor of the National Geographic Magazine.

The Education of Abraham Lincoln and of Henry Adams.

Prof. J. Duncan Spaeth, Ph.D., Princeton University.

Travelogue of Alaska. Illustrated.

Edgar C. Raine, Ph.D., Explorer.

Preparation for Journalism.

Talcott Williams, LL.D., Director of Columbia University School of Journalism.

The Frontiers of the Universe. Illustrated.

Prof. B. R. Baumgardt, Astronomer and Lecturer.

Constructive Christian Democracy.

J. Stitt Wilson, A.M., Berkley, Cal.

Y. M. C. A. LYCEUM COURSE.

The College Y. M. C. A. conducts at a very reasonable cost a series of interesting lectures and musical entertainments.

ENGINEERING COURSES.

Industrial Engineering
Civil Engineering

Mechanical Engineering
Electrical Engineering

There is an increasing demand for men with training that has the technical attitude. There is, with this, a widening field for the application of technical knowledge and an increasing degree of specialization. To meet this demand we are offering courses that add to a core of cultural studies those subjects that form the foundation of all engineering work. During the first two years of the courses all students pursue the same subjects. At the end of that time the courses partially divide. Those who do not wish to follow a strictly technical course but expect to go into professions that have to do largely with manufacturing or handling products of a technical nature, will take the course in Industrial Engineering. This course combines the more practical subjects of both Engineering and Business Administration. It will meet the demands of those who expect to work into executive or administrative positions rather than those having to do with design.

Other students according to their interests will decide between Civil Engineering on the one hand and Mechanical and Electrical Engineering on the other. These three courses are largely parallel during the Junior year. Men following either of these courses will in all likelihood specialize after graduation; but since it is very hard to forecast a man's exact career and the direction in which he may develop, it has not been deemed wise to specialize any further in these courses, but to try to give each man a foundation on which he may build his special work.

Civil Engineering covers a widening field especially in view of the large activity in transportation problems, including the use of the highways; and the enlarged demands of the public on governing bodies for better living conditions. If these demands are to be met there must be a body of men having engineering training to carry on the work needed.

The increased use of automotive vehicles and the spread of the

methods of "mass production" indicate a part of the field of Mechanical Engineering. Indeed the automobile manufacturers say they can use several times as many trained engineers as the entire output of all the technical schools. The increased cost of coal and the consequent use of electric power call for a large supply of Electrical Engineers.

Prerequisite to the Engineering Courses are Advanced Algebra, Plane Geometry and Trigonometry, and two credits in one Modern Language. Students not having had Trigonometry can make the same up during the Freshman year. Students not having credits in Modern Language or starting a language in College must take the same language for two years instead of the one year called for in the list of required studies.

The following technical subjects underlie all engineering training, and are required of all students in Engineering Courses.

1. **Elementary Mechanical Drawing.**—Use of instruments, orthographic, isometric and cabinet projections, simple sections, intersections and developments, lettering, sketching, tracing and blueprinting.

Three hours thruout the year. Credit of two semester hours.

Note. The College provides drawing desks, etc., but each student furnishes his own drawing outfit costing about thirty dollars. Students are urged to avoid the purchase of cheap instruments which soon become worthless. Engineering students use their drawing instruments thruout their course and for years afterward. The purchase of an outfit of good grade is therefore economy.

2. **Descriptive Geometry.**—The first semester's work comprises descriptive geometry, problems relating to the point, line, and plane in space, followed by a thoro drill in sections, intersections, and developments, with applications to engineering and architectural problems. The instruction is designed to develop in the student the power of concise reasoning. During the second semester the work is a continuation of Course 1.

Two hours of recitation and four hours of drawing weekly, first semester. Two periods of three hours each, drawing, second semester. Total credit of four semester hours.

- 3. Mechanics (A). Statics and Dynamics.**—Forces in equilibrium, simple structures, translation and rotation, work, energy, power. The periods are two hours to give time for a full discussion of difficulties.

Three recitations weekly thruout the year. Credit of six semester hours.

Prerequisite, Mathematics 3 and 4.

- 5. Hydraulics.**—A study of the mechanics of water at rest and in motion, with applications to a variety of problems relating to the pressure of water and to its flow in natural and artificial channels, pipes, etc.

Three recitations weekly. Credit of three semester hours.

Prerequisite, Engineering 3 and Mathematics 5.

- 6. Materials Testing.**—Recitation and laboratory course in the study of the properties of engineering materials. In the first semester the standard test of cement, mortar, and sand are made and compared. The common tensile, compressive, and transverse tests on steel, timber, and concrete are made and discussed. The solution of practical problems is emphasized. During the second semester the results of the laboratory work of the first semester are applied in the application to the use of the materials in engineering work.

Two recitations and three laboratory hours weekly, first semester. Credit of three semester hours. Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Engineering 3 and 4, and Mathematics 5.

- 7. Elements of Electrical Engineering.**—The application of the fundamentals of electricity and magnetism to electrical engineering practice. Theory, structure, and operation of electrical machinery. Recitation work supplemented by simple laboratory experiments.

Three recitations, first semester; two recitations and three laboratory hours, second semester. Credit of six semester hours.

Prerequisite, Physics 3, and 4, and Engineering 5.

- 8. General Engineering.**—A course partly of lectures and partly of problems intended to call to the student's attention some of the requirements in character and mind for suc-

cess in engineering. The use of the slide rule, tables as given in the usual hand-books and the working out of a number of simple problems make up the remainder of the course.

Two hours of recitation for one-half semester. Credit of one semester hour.

- 11. Plane Surveying.**—This course gives drill in the use of the more common surveying instruments, in the best methods of keeping notes, and in the computations and mapping required in connection with the usual work of a surveyor.

Two hours of recitation first semester and one-half second semester. Credit of three semester hours.

- 12. Surveying (A).**—Practice work done in connection with (11). Partly field work giving a drill in the use of the more common surveying instruments and partly work in the class room plotting surveys and making the necessary computations.

Three hours per week thruout the year. Credit of two semester hours.

INDUSTRIAL AND CIVIL ENGINEERING.

Professor Clutz and Mr. Reen.

- 13. Surveying (B).**—Field work done in the Summer School between the Sophomore and Junior, or the Junior and Senior years. Topographic surveying using a variety of instruments including the plane table. Railroad surveying. Adjustment of instruments. Daily recitations are used to coördinate the instruction.

Credit of two semester hours.

- 14. Astronomy and Geodesy.**—Spherical Astronomy as used by the surveyor and Elementary Geodesy.

Three hours per week, first semester. Credit of three semester hours.

- 17. Railroads (B).**—A course in the economics of railroad construction and operation, maintenance and valuation.

Three hours. Credit of three semester hours.

- 18. Structural Design (A).**—Stresses in framed structures, principally roof trusses and bridges of various types. Graphical methods of solution are employed.

Two hours of recitation and four hours of drawing weekly, first semester. Prerequisite, Course 3. Credit of three semester hours.

- 19. Structural Design (B).**—A course in the strength of materials as applied to the analytical design of structures of wood and steel. Beginning with beams the student finally makes all the calculations necessary in the complete design of a plate girder and trusses of the riveted and pin connected types.

Given in the second semester, Junior year, and first semester, Senior year. Two hours recitation and four hours computation or drafting weekly in the Junior year; two hours recitation and four hours computation or drawing in the Senior year.

- 28. Structural Design (D).**—A course in the use and design of reinforced concrete.

Given second semester, Senior year. Two hours recitation and four hours computation or drafting. Credit of two semester hours.

- 20. Structural Drafting.**—The making of detailed drawings for the component parts of a steel structure. Conformity with the best practice is required, and the drawings are carefully checked.

Six hours of drawing weekly, second semester. Credit of two semester hours.

- 21. Contracts and Specifications.**—The elements of contract law as applied to the mutual relations of engineer, contractor, and owner. Critical review of typical specifications and practice in specification writing.

Three recitations weekly. Credit of three semester hours.

- 22. Masonry.**—Design and construction of stone and concrete structures, heavy foundations, arches, walls, and dams. Instruction is in part by recitation, but includes drafting-room work in the design of several typical structures.

Two recitations and three hours of drawing weekly. Credit of three semester hours.

- 23. Highways.**—Recitations on the design, construction, and maintenance of roads and pavements, with especial consideration of the exigencies of present-day traffic.

Three recitations weekly. Credit of three semester hours.

- 24. Water Supply Engineering.**—The quantity and quality of water from various sources. Works for the collection and storage of water, for its purification and for its distribution.

Three recitations weekly. Credit of three semester hours.

- 25. Sewerage.**—Various types of design and construction are discussed in recitations. Plans for a small sewer system are made by each student. Modern methods for the purification and disposal of sewage and garbage. Visits are made to plants under construction and in use.

Three recitations weekly. Credit of three semester hours.

- 26. Engineering Society.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, thruout the year. Credit of two semester hours. Required of all Juniors and Seniors.

- 27. Industrial Economics.**—The organization of the modern industrial corporation. The methods of keeping track of and setting forth the facts of the progress of production, especially as shown by graphic methods. The place of the engineer in the industrial organization.

Three hours recitation per week thruout the year. Credit of six semester hours.

MECHANICAL ENGINEERING.

Professor Rosenstengel.

- 31. Shop Work.**—Simple exercise in the formation of green sand moulds, supplemented by lectures on modern foundry practice. Bench and lathe work in wood, elements of pattern making.

Six laboratory hours weekly, first semester. Credit of two semester hours.

- 32. Shop Work.**—Forge practice in iron and steel. Shaping, hardening, and tempering of tools. Machine and bench work in metals. Lectures on modern shop practice.

Six laboratory hours weekly, second semester. Credit of two semester hours.

- 33. Kinematics.**—Theory of mechanisms, instant centers, cams, gears, linkages, velocity and acceleration diagrams, etc. Recitation work supplemented by the solution of practical problems in the drawing room.

Two recitations and three hours of drawing weekly, first semester. Credit of three semester hours.

Prerequisite, Course 2.

- 34. Machine Design.**—An elementary course showing the application of the fundamentals of mechanics and kinematics to machine design. Selection of mechanisms for specified work, analysis of energy and force problems in machines, and proportioning of detailed parts from theoretical and practical considerations.

Two recitations weekly, second semester. Credit of two semester hours.

Prerequisite, Course 6 (1st semester), 4, and 33.

- 35. Machine Design.**—Application of principles of Course 34 to the design of two typical machines, including all necessary computations; working drawings of most important parts, and a finished assembly drawing.

One recitation and six hours of drawing weekly thruout the year. Credit of six semester hours.

Prerequisite: Course 34.

- 36. Heat Power Engineering.**—Thermodynamics of gases and vapors, theoretical gas cycles, application of theory to problems of commercial heat engines, engine performances and efficiencies.

Three recitations weekly, first semester, two recitations weekly, second semester. Credit of five semester hours.

Three recitations weekly. Credit of three semester hours.

- 37. Heat Power Engineering.**—A continuation of Course 36. Fuels, combustion, boilers, gas engines, steam engines and tur-

bines, power house auxiliaries, etc. Efficiency and economy of operation. Selection and combination of elements for power houses. This study covers the theory necessary for Course 38.

Three recitations weekly first semester. Credit of three semester hours.

Prerequisite, Course 36.

38 Power Plant Design.—Design of a typical power plant, selection and arrangement of main units and auxiliaries. An outline drawing is made showing the location and arrangement of boilers, turbines, condensers, pumps, etc., the provision for coal and ash handling, and storage. Economic features of power house design emphasized.

Six hours of computation or drawing, one hour recitation, weekly, second semester. Credit of three semester hours.

May be taken only in conjunction with Course 37.

39. Mechanical Engineering Laboratory.—Calibration of common engineering measuring instruments, such as steam gauges, thermometers, indicator springs; determinations of quality of steam; measurements of power; efficiency tests of boilers, gas engines, pumps, etc. Computation periods.

Three laboratory hours weekly, first semester. Credit of one semester hour.

Prerequisite, Course 36.

40. Engineering Society.—Oral and written reviews and discussions of current technical articles.

One hour weekly, second semester. Credit of one semester hour. (Open only to Seniors.)

ELECTRICAL ENGINEERING.

Professor Rosenstengel.

45. Theory of Electrical Machinery.—Fundamentals of the electric and magnetic circuit; representation of alternating currents and voltages by vectors and complex quantities; study of the alternating current circuit; theory of trans-

mission lines; transformers, alternators, synchronous and induction motor, direct current machines, etc.

Four recitations weekly, first semester. Three recitations weekly, second semester. Credit of seven semester hours.

Prerequisite, Course 7.

- 46. Characteristics of Electrical Machinery.**—This course supplements the work of Course 45. Problems in alternating current circuits. Outline design and predetermination of performance characteristics of transmission lines, transformers, alternators, alternating current motors and direct current generators and motors. Practice is given in the use of standard hand books.

Nine hours of computation weekly, second semester. Credit of three semester hours.

May be taken only in conjunction with Course 45.

- 47. Electrical Engineering Laboratory.**—Elementary and advanced experimental work in electrical engineering: the study of polyphase alternating current circuits, shape of A. C. waves, determination of the magnetic properties of steel and iron; commercial testing of alternators, transformers, synchronous motors, induction motors, D. C. machines, etc.

Three laboratory hours weekly, first semester; six laboratory hours weekly, second semester. Credit of three semester hours.

Prerequisite, Course 7.

- 48. Engineering Society.**—Oral and written reviews and discussions of current technical articles.

One hour weekly, second semester. Credit of one semester hour. (Open only to Seniors.)

- 49. Telephones.**—Theory of the telephone. The design and construction of telephone instruments, switchboards, and transmission lines.

Two recitations, second semester. Credit of two semester hours.

Prerequisite, Course E. E. 7.

- 50. Heating and Ventilation.**—Methods of heating and ventilating buildings, amount and condition of air for ventilation, loss and gain of heat, hot air heating, steam heating, hot water

heating, district heating, temperature control, furnaces, boilers, radiators and valves.

Three recitations weekly, second semester. Credit of three semester hours.

Prerequisite, Course 36.

Trips of Inspection.

Several short tours are arranged during the course for the inspection of engineering structures, power plants, shops, manufacturing establishments, etc., in the vicinity. Reports are prepared by each student from his individual notes.

Engineering Library.

A departmental library and reading room of reference books, periodicals and technical reports is being built up in connection with the College Library. Students have access to the following publications:

"Engineering News-Record," "Municipal Journal," "Railway Review," "Electrical World," "Industrial Management," and "American City."

Engineering Equipment.

For a detailed description of the equipment in engineering see page.126.

MILITARY SCIENCE AND TACTICS.

(Reserve Officers' Training Corps.)

*Major Courtland Nixon, U. S. Army, Captain Perry L. Baldwin,
Inf. D.O.L., Captain Samuel C. Thompson, Inf. D.O.L.
First Sergeant James W. Oliver, Inf., D.E.M.L.*

As a part of the program for national preparedness, Congress by Act of June 3, 1916, authorized the establishment and maintenance in civil institutions of learning fulfilling certain requirements, of units of the Reserve Officers' Training Corps, so that in time of national emergency there may be a sufficient number of educated men, trained in military science and tactics, to officer and lead intelligently the large armies upon which the safety of the country will depend. Under the provisions of this Act the President of the United States has established an infantry unit, senior division, of the Reserve Officers' Training Corps in this College and has detailed a regular army officer to serve here as Professor of Military Science and Tactics, another officer, and a noncommissioned officer to serve as his assistant. In order to encourage students to enter this corps said Act of Congress makes very liberal provisions furnishing the members free of charge all the needed equipment in arms, ammunition, uniforms, and, in the case of those taking the advanced course, additional uniforms, training camp expenses, and an allowance in cash equal to the regular army garrison ration. The work includes lectures and classroom work as well as military drill, target practice and gymnastic exercises. A lecture on the tactics of the battle of Gettysburg will be given by a representative of the Battlefield Commission to members of the Senior class. West Point Cadets came to Gettysburg annually prior to the World War, for similar instruction. The mental as well as the physical benefits which a student may derive from this course are obvious; and it supplies in the most approved form that element of training in discipline and obedience to authority which has been largely lacking in the educational system of our country. There is a great demand throughout the country for teachers of high school grades who are able to give military instruction.

The Reserve Officers' Training Corps should not be considered solely on the basis of the personal benefits derived in college and

its value in semester hours toward a diploma. The nation has in its wise policy selected this means of preparing and securing its officers for a future emergency. The man and the college that neglects this opportunity to prepare will find, in future years, no door open to a commission as an officer in the Reserve Army which is our national defense.

A course if elected becomes exactly like a required course in mathematics or history, and the student must complete it, but other than this it involves no compulsory military obligations.

The course in Military Science and Tactics is divided into two parts, each one requiring two years of work.

BASIC COURSE.

Any student electing this course must devote an average of at least three hours per week for two successive years to the work required (First Year and Second Year.)

ADVANCED COURSE.

When any member of the Reserve Officers' Training Corps has completed (here or elsewhere) the first two academic years of service, and has been recommended for further military training by the President of the College and the Professor of Military Science and Tactics, he will be furnished by the U. S. Government commutation of subsistence (an allowance) equal to the regular garrison ration prescribed for the Army. This allowance now is 40 cents per day, extending thru and including the summer recess between third and fourth years. A student electing to take this advanced course will be required to devote an average of at least five hours per week to the work during the remainder of his college course (Third Year and Fourth Year). He must also attend the training camp prescribed by the Secretary of War between the third and fourth years, his transportation to and from this camp, clothing and subsistence while there, and pay at the rate of one dollar per day, being furnished by the U. S. Government.

OUTLINE OF COURSES IN MILITARY SCIENCE AND TACTICS.

Basic Course.

First Year.

1. An introduction to Military Science including Military Courtesy; Physical Training to develop proper carriage and posture; also Field Day Events; Infantry Drill; Care

and Use of Arms and Equipment; Scouting and Patrol-
ling; Elements of Rifle Marksmanship.

2. Infantry Drill; Guard Duty; Rifle Marksmanship; Individual Infantry Equipment.

Three periods thruout the year. Credit of two semester hours.

Second Year.

3. Military Sketching and Map Reading; Infantry Drill; Infantry Weapons; Bayonet; Automatic Rifle, etc.

4. Infantry Drill; Personal Hygiene' and Camp Sanitation; Musketry; Pistol and Rifle Marksmanship.

Three periods thruout the year. Credit of two semester hours.

Prerequisite: Courses 1 and 2.

Advanced Course.

First Year.

5. Field Engineering; Infantry Drill, including Leadership as Sergeants and Lieutenants. Accompanying infantry weapons, one pounder gun.

6. Accompanying infantry weapons, continued, Machine Gun; Stokes Trench Mortar; Infantry Drill and Leadership; Military Law and Rules of Land Warfare; Rifle Marksmanship practical.

Five periods thruout the year. Credit of eight semester hours.

Prerequisite: Courses 1 to 4 inclusive.

Second Year.

7. Minor Tactics; Tactical Walks on the battlefield; Elementary Problems on Sand Table; Infantry Drill, with Command and Leadership.

8. Military History and Policy of the United States; Administration, theoretical and practical; Minor Tactics, Problems

and War Games; Infantry Drill; Command and Leadership.

Five periods thruout the year. Credit of eight semester hours.

Prerequisite: Courses 1 to 6 inclusive.

No student electing one of these courses will be promoted to the next higher class in College or graduated from College unless he has completed the work of the course for the previous year to the satisfaction of the Professor of Military Science and Tactics.

The appointment of cadet officers and noncommissioned officers for the Corps are made from members of the Junior and Senior Classes in College and from members taking post-graduate courses, provided there is a sufficient number. It is the intention to give the student entering the advanced course the benefit of an opportunity of training in a responsible rather than in a subordinate position.

No military duties in addition to the training courses outlined are required from members of the Reserve Officers' Training Corps.

A student having completed these courses will on graduation from College receive his Reserve Officers' Commission issued by authority of the President of the United States, and be eligible for appointment to the Officers' Reserve Corps as a temporary second lieutenant of the regular army in times of peace for purposes of further instruction, for a period not exceeding six months, with all the allowances now provided by law for that grade, but with pay at the rate of \$100 per month.

For those who aspire to enter the ranks of regular army officers from civil life the Reserve Officers' Training Corps in our College offers unexcelled advantages and opportunities.

EQUIPMENT.

Located as it is in the heart of the great Battlefield of Gettysburg, Gettysburg College is admirably situated for conducting courses in Military Science and Tactics. This situation is rendered doubly important when one stops to realize that this very terrain is that used for practically all theoretical instruction given in Minor Tactics all over the country. While other units of the R. O. T. C. are issued maps of this terrain for their theoretical instruction, they are compelled to work out practical problems on available local terrain (often poorly mapped). This institution

enjoys the advantage of conducting its practical work on the same terrain which is studied in the text furnished by the War Department.

Complete equipment is furnished by the Government at no cost to the student. In addition to the Service Rifles and Pistols regularly used for drill and target work, there is on hand a complete set of Special Infantry Weapons consisting of Browning Automatic Rifles, Browning Machine Guns, 3-inch Stokes Mortar, 37-mm. Gun, Hand and Rifle Grenades. All of these are used for both theoretical and practical instruction.

For the study of Minor Tactics, complete maps, in different scales, are furnished. These maps are all of the terrain in the immediate vicinity of Gettysburg. This collection is supplemented by a B-H Relief Map with which over one thousand combinations of terrain may be made, thus covering every possible formation of ground over which troops may be required to maneuver.

Complete files of all War Department publications are available in unit headquarters. The system of correspondence, filing, and property accounting is exactly the same as that used in the army. Students are thus enabled to receive a well rounded course in Administration and both see and do the practical work.

Both an indoor and outdoor target range is provided. During inclement winter weather instruction is carried on indoors with sub-calibre rifle and pistol. As soon as the weather permits, firing is started out of doors with the U. S. Magazine Rifle M'03, Colt Automatic Pistol, Browning Automatic Rifle and Machine Gun.

The first floor of the Gymnasium, which contained a baseball cage and locker room, no longer in use, was entirely transformed for use of the Military Department. The room is now equipped with B. & H. Relief Maps, sand tables used for topography and minor tactics and problems; a relief map of the Gettysburg battlefield, which was largely constructed by Captain Randolph, and completed by the students; nine complete sketching cases, a three inch Stokes mortar, a Browning machine gun mounted on a tripod, a Browning machine gun dismantled on a table with the various parts labeled; three complete Browning automatic rifles, one being dismantled, a thirty-seven millimeter (one pounder) gun with ammunition cart, three Winchester single shot .22 calibre rifles and six sub-calibre Springfield rifles for gallery practice, hand grenades and grenade rifle dischargers.

The recruit who contemplates attending one of the summer camps gains an idea of his future lodging quarters by inspecting

the shelter tent in one corner of the room, where there is on display an entrenching shovel and mattock, wire cutter, bolo, first aid equipment, litters, etc.

The indoor range which is fifty feet in length is used by the members of the R. O. T. C. and the rifle club affiliated with the National Rifle Association, for competition between colleges. The bullets strike a steel boiler plate behind the targets. Landscape targets are available for instruction in fire designation and distribution.

FINANCIAL BENEFITS OF R. O. T. C. TO COLLEGE MEN.

When a student enters the unit he receives a complete uniform valued at \$50 and consisting of the following articles of clothing:

1 Cap and ornament	1 Breeches, woolen, pr.
1 Coat, woolen	1 Belt, waist
2 Shirts, flannel	1 Leggings, woolen, spiral, pr.
1 Cravat	2 Ornaments, collar
	1 Ornament, sleeve

For each additional year that he remains in the unit, he receives another complete uniform. Thus the student taking the complete course (four years) will receive clothing alone to the value of two hundred dollars.

By completing the advanced course, the student receives the following from the government:

Uniforms @ \$50 for four years	\$200.00
Textbooks	20.00
Commutation of subsistence @ 30c for 590 days	177.00
Rations in kind at camp	31.00
Ration allowance enroute to and from camp	8.00
Travel allowance @ 5c. for 1,000 miles (average)	50.00
Pay while in camp @ \$1 for 42 days	29.40
Uniform while in camp	25.00
<hr/>	
Total amount received in four years	\$540.40

ROSTER OF OFFICERS AND NON-COMMISSIONED OFFICER.

Battalion Staff...(Commissioned).

W. G. McAllisterMajor
 R. C. Geiselman1st Lt. and Bn. Adjt.
 H. W. WebnerCapt. Special Weapons
 L. M. Sowers2nd Lt. Bn. Supply Officer

Non-Commissioned Staff.

H. E. YostWarrant Officer, Principal Musician
 E. H. FeldmannBattalion Sergeant Major
 B. T. SchantzBattalion Supply Sergeant
 F. A. ShearerBattalion Color Sergeant
 N. M. FlemingBattalion Color Corporal
 H. F. GeiszBattalion Musician

Company Officers.

Company A.	Company B.	Company C
Capt. A. R. Naus	Capt. G. B. Shetter	Capt. R. C. Robinson
1st Lt. C. A. Sloat	1st Lt. T. W. Eshenaur	1st Lt. N. L. Altland
2nd Lt. H. T. Uhler	2nd Lt. H. G. Ports	2nd Lt. C. E. Stoner
2nd Lt C.W. Munshower	2nd Lt. W. L. Gundel	2nd Lt. L. B. Walter

Non-commissioned Officers.

First Sergeants.

Company A.	Company B.	Company C.
Theo. Collins	A. F. Trumbore	F. L. Snyder

Platoon Sergeants.

Company A.	Company B.	Company C
H. A. Fosnacht	J. J. Clutz	S. G. McKenzie
E. F. H. Grothe	P. E. Lehman	L. A. Phillips

Sergeants.

A. G. MacMillan
J. H. Peters
G. I. Melhorne

R. E. Bamberger
F. E. Reinartz
J. L. Benedict

Fred Stueber
D. K. Weiser
G. J. Curran

Corporals.

J. C. Jarboe
G. W. Hafer
R. Althouse
E. R. Reiter
Thos. Feltz
R. E. Umberger

H. L. Wink
W. E. Gentzler
L. Fisher
W. C. Smith
G. W. Hunter
R. Baublitz

F. W. Beers
M. D. Henneberger
B. Armor
J. H. McDaniel
C. F. Buzard
F. H. Markley

SUMMER SCHOOL.

During the past few years there has been a growing demand for summer courses. Much of this arises from the varied preparation furnished by the schools at which the students prepare for college. The student wants to make up the work required to get in line with the regular candidates for graduation. An increasing number of teachers have likewise wanted an opportunity to pursue courses in line with their profession. The present program of advancement in the certification requirements of the State will greatly increase this demand. All High School teachers desiring certification as college graduates must have at least twelve semester hours in educational subjects and six semester hours of student teaching. Beginning with September 1927 all High School teachers will be required to have a college diploma.

In view of these needs the Board of Trustees has authorized a summer session. The school will be in charge of the College Faculty and the credits entered on the College records just as if done during the academic year. The summer session will open on June 19 and continue to August 3. A sixty minute period daily will be the equivalent of two semester hours; a ninety minute period daily will be the equivalent of three semester hours.

Admission and enrollment will be on the same basis as the regular college requirements. The student's previous credits will determine his classification. All new students will be charged an enrollment fee of five dollars. Tuition at the rate of five dollars per semester hour credit will be charged of all students.

The administration of the summer school has been placed in the hands of the Faculty members participating in it. The Faculty has appointed the following executive committee: Professors C. F. Sanders, Director; Professor Clutz and Professor F. H. Kramer.

Following is the list of courses which will be offered in the summer school. The descriptions of most of them will be found under their respective departments in this Bulletin. Further information and the regular summer school Bulletin may be had on request from Professor C. F. Sanders, Director of the Summer School, Gettysburg College, Gettysburg, Pa.

Educational Subjects.

History of Education
Educational Psychology
Introduction to Teaching
Methods of Teaching
School Organization
Educational Sociology
School Administration
Principles of Secondary Education

College Courses in Other Departments.**English:**

English Composition
English and American Literature

German:

Elementary Grammar
Reading and Composition
Advanced German

French:

Elementary Grammar
Reading and Composition
Advanced French

Spanish:

Elementary Grammar
Reading and Composition
Advanced Spanish

History:

Modern Europe
The United States

Mathematics:

Geometry
Plane Trigonometry
Algebra beyond Quadratics
College Algebra
Elementary Analysis
Advanced Mathematics

Economics:

Principles of Economics
Public Finance and Taxation

Political Science:

American Government

Philosophy :

Psychology

Logic

Ethics

Sociology

Introduction to Philosophy

Physics :

General Physics

Elementary Physics (High School)

Physical Geography (High School)

Chemistry :

General Chemistry

Qualitative Analysis

Biology :

General Biology

Botany

Engineering :

Elementary Surveying

Spherical Trigonometry and Practical Astronomy

In several of the departments students may enroll for post graduate work. This is especially the case in the Department of Education.

GENERAL INFORMATION.

The College aims to develop the greatest possible individuality and the highest manhood of the student. The prevailing influences are such as tend to lead young men to an active Christian life and to a full realization of their personal responsibilities. The immediate supervision of the students is in the hands of the President and Dean with the Advisers.

STUDENT'S ADVISERS.

The professor acts as the adviser of all the students having a major in his subject. He exercises oversight in the student's selection of electives and in the general character of his work.

STUDENT COUNCIL.

Without lessening its authority and responsibility, the Faculty has delegated certain duties in government to the student body as an exercise in self-government. The students act through a Student Council consisting of four Seniors, three Juniors, two Sophomores, and one Freshman, elected by their respective classes. This Council acts in certain matters of discipline and in matters concerning the general welfare of the student body, and is one medium of communication between the students and the Faculty. Hazing in any form is forbidden. Any practice involving physical personal injury and bodily harm or the performance of any humiliating action entailing surrender of dignity and self-respect under fear or threat of force, is regarded as hazing. To have or to drink intoxicating beverages is forbidden.

TERMS AND VACATIONS.

The college year of 35 weeks is divided into two semesters. The first semester begins at 11 A. M. on the third Wednesday in September and continues, with recesses at Thanksgiving and Christmas, to the end of January; the second semester begins when the first semester ends and continues, with an Easter recess, to Commencement Day, the second Wednesday of June. The closing days of each semester are devoted to examinations.

RULES GOVERNING CHURCH AND CHAPEL ATTENDANCE.

Every student rooming under college regulations is required to attend, on week days, a prayer service at 7.45 A. M. in Brua Chapel. When absent in any semester FIFTEEN TIMES, the student is warned, and if absent TWENTY-ONE times he is suspended for two weeks.

Every student is required to attend one designated service every Sunday in the College Church. When absent TWO times in any semester the student is warned, and if absent THREE times he is suspended for two weeks. Students affiliated with another denomination than the Lutheran will, *on the parent's written request*, be permitted to attend the church for which request is made, and in such cases the College has no responsibility for regularity of attendance.

As soon as the number of absences designated have been incurred by any student the proctor will give written notice to the Registrar who will then send to the student a warning, or notice of two weeks' suspension, as the case may require.

If the limit of absences from church or chapel, necessitating suspension as a penalty, is reached during the last ten days preceding the close of the college year, the student shall be suspended for the remainder of the year

and in addition he shall be deprived of all cut privileges in either church or chapel, as the case may be, during the next succeeding semester.

When a student, due to protracted sickness or for some other imperative reason, exceeds the number of absences allowed for church or chapel, the Dean is authorized to extend the number of absences allowed before the penalties noted above become operative.

A church absence incurred by reason of absence from town may be cancelled upon presenting in person within three days to the Proctor a statement signed by the Dean that the student was given permission to leave town, or a written statement signed by the officiating Minister to the effect that the student attended church on the date in question.

Members of athletic teams and musical organizations, participants in literary contests, and representatives of societies for the purpose of attending conventions, may, on application to the Dean, receive such extension of absence allowance as duties incident to their work on these organizations may require, provided the total absence allowance does not exceed THREE absences from church or THIRTY absences from chapel.

RULES GOVERNING CLASS ATTENDANCE.

(1). Each student is allowed individually 10 per cent. absences from class room work each semester in each course, except in the Department of Military Science and Tactics; the War Department schedule does not authorize reduction in the prescribed number of hours. Fractions are not counted and absences may not exceed 4 in any academic course during a single semester. The student is urged and expected to make use of this allowance of absences only in case of sickness or for some other good reason.

(2). A further allowance of absences may, on petition, be granted members of athletic teams and musical organizations, to participants in literary contests, and to representatives of societies for the purpose of attending conventions, but in no case shall an individual student be allowed a total of more than 15 per cent. absences. This further allowance in no case to be more than 50 per cent. additional.

(3). Absences are reckoned from the first day of the semester. Any absence on the two days preceding or the two days following any recess is counted as two absences.

(4). Absences beyond the number allowed from class work, in (1) and (2) above, will not be excused for any cause whatever, and no extension of absences will be allowed; and all excess absences in any class count as zero on the daily class grade. But, if any student has not taken his allowed absences needlessly, and has exceeded the allowed amount because of protracted sickness or other imperative necessity, the instructor at his discretion may assign extra work as a substitute for the work missed on account of the excess absences and may credit the grade for this work in the place of the zeros given for the excess absences. The student should understand that he cannot demand this from any instructor as a right, and that such a privilege is more likely to be granted to a student whose previous record for attendance and devotion to daily duties is good than to one whose record is poor.

(5). In case of absences from the class work in any subject in excess of the allowed amount, the instructor may exclude the student from the semester examinations in the subject, or may even give him an F for the semester grade necessitating the repetition of the semester's work in this course. The Faculty may also in case of excess absences in two or more subjects, or in church

and chapel, require the work in all courses of the semester to be repeated.

(6). A student returning to college from a suspension for absence from chapel or church is permitted no absence from chapel or church, as the case may be, for the remainder of the semester and is required to make up the work missed in such manner and at such time as the several instructors may require. For such extra work on the part of the instructors the student must pay to the college Treasurer, for each examination in each course, the sum of three dollars. This charge also applies to absences incurred under item (4), cases of protracted sickness excepted.

(7). Physical training is required of all male students of the Freshman and Sophomore Classes who are not members of the Reserve Officers' Training Corps. When absent from the scheduled exercises in Physical Training or Military Science four times, the student is warned; when absent five times he is suspended for two weeks.

EXAMINATIONS.

Examinations are held in all subjects at the close of each semester or when, during the term, a subject is completed. Instructors may hold topical or quiz examinations at the time of any of the regular appointments with the class. Absences from these examinations are governed by the rules given above.

CONDITIONS AND DEFICIENCIES.

Freshman entrance conditions must be satisfied by the beginning of the Sophomore year.

No credit is given for a subject reported as E, F, or "inc.," and such a subject remains a deficiency until removed. An "inc." may be removed by the completion

of the work within one year from the time when it is incurred; at the end of that time an unsatisfied "inc." becomes an F (or E if so recommended by the instructor before the expiration of the time limit), unless the Faculty shall, because of sickness or for an equally good reason, extend the time for removing the "inc." An F can only be removed by repeating the semester's work in the given subject, and the student is held responsible for repeating the subject the next time it is offered. An E means that the student is entitled to one re-examination within the specified time, and it may be removed by passing the regular scheduled examination at the end of the semester's work in the next succeeding class, or a special examination given at such a time as the instructor shall appoint (which time must not conflict with the regular class work of the student), not later than Oct. 10 of the year following the one in which the E has been incurred. The instructor will report the result of any such examination with the grade (or he may report the re-examination as "not passed"). If the student fails to pass the re-examination (or fails without sufficient reason to report for a scheduled re-examination), he can only remove the deficiency by repeating the course.

No student will be allowed to graduate who has an F on his record unless there has been no chance of repeating the work before graduation, and then only if on recommendation of the instructor in charge the Faculty shall allow an equivalent substitute. An E shall not prevent a student from graduating provided he has credit for all of the prescribed work and all of the semester hours required for the given degree.

A student who, at the end of the first semester, receives a grade of F in courses aggregating 9 or more semester hours, is required to withdraw from the college at once and may not be reinstated by the Faculty until the following September, and if reinstated he will be on pro-

bation. A student who, at the end of the second semester, receives a grade of F in courses aggregating 9 or more semester hours may not be admitted to College the next September or at any time except by vote of the Faculty, and if admitted he will be on probation. The Faculty may at any time by special action require any student to withdraw on account of poor scholarship provided the student has had previous warning. A second failure at any time under these rules (after reinstatement) will necessitate immediate and permanent withdrawal from the College.

PROBATION.

If, in the judgment of an instructor, a student, because of indifference or disorderly conduct, is endangering his scholastic standing, the instructor shall notify the Registrar and the student that the latter is on probation in that particular course. At the end of two weeks the instructor shall notify the Registrar whether

(a) the probation is continued, or

(b) the probation is removed.

(Notice of (b) may be given before the end of two weeks).

If a student is on probation in two or more courses he is on general probation commencing the Monday following the receipt (by the Registrar) of the second notice. The general probation

(a) includes ineligibility to represent the college in any way and

(b) warning to the parent or guardian; notice to the student, and director of athletics, and the Faculty; and

(c) cannot be removed before the expiration of one week.

If the Registrar receives notices of sufficient removals of probations to make the number one or none, the general probation is removed on the next Monday.

REINSTATEMENT.

A student who for any reason has been asked to withdraw from the College may not be readmitted without Faculty action.

HONORS.

The following honors will be awarded at the close of each year:

A. Final Honors will be awarded to members of the graduating class meeting the following conditions:

General Final Highest Honors will be awarded to those students who have maintained thruout their four years the grade of A in all of their studies.

General Final Honors will be awarded to those students who have maintained the grade A in at least half of the work of their four college years and have not fallen below the grade B in their studies of the junior and senior years.

Students entering at the beginning of the sophomore year will be awarded the same honors if for three years they meet the above requirements as to grade.

B. Department Final Honors. If the head of any department recommends a student taking a major in that department as having shown special excellence in that work, the student shall be awarded Final Honors in that department provided he does not have a grade below B in more than twelve semester hours of work in other departments.

C. Class Honors for Freshman, Sophomore, Junior, and Senior Years. Highest Honors for the designated year will be awarded to those members of these classes who have maintained the grade A in all their studies thruout the year.

Class Honors for any particular year will be awarded

to those members of the class who have maintained the grade A in at least half of the work of the year and do not have a grade below B in any of their studies for the year.

These awards are announced at Commencement and published in the next Catalog number of the BULLETIN.

PRIZES.

Muhlenberg Freshman Prize. The interest of a fund of five hundred dollars, contributed by F. A. Muhlenberg, D.D., LL.D., a former professor in this College, is given at the close of each year to that member of the Freshman Class who is found to have attained the highest grade of scholarship in the Classical Course.

Baum Mathematical Prize. Charles Baum, M.D., Ph.D., Class of 1874, of Philadelphia, has contributed five hundred dollars, the income from which is to be given annually to that member of the Sophomore Class who shows the greatest proficiency in Mathematics.

Hassler Latin Prize. Mr. Charles W. Hassler furnished a fund, the interest of which is annually expended for the purchase of a Gold Medal, to be presented to that student of the Junior Class, who, at the end of the year, shall be rated as the best Latin Scholar.

Graeff Prize. This prize was founded by Mr. John E. Graeff, Class of 1843. The interest on a fund of \$500 is awarded for the best English Essay from a member of the Senior Class, on a subject previously assigned. The decision is made by a committee appointed by the Professor of English.

Prizes in Debate. The Literary Societies of the College provide three prizes of \$36, \$24, and \$15, respectively, for the encouragement of skill in debating. The first contest takes place about the middle of November between teams chosen by the Sophomore and Freshman Classes, respectively, and the winning team is rewarded with \$15. The second contest between the winning team

and a team from the Junior Class, takes place about the middle of March, and the team that wins this contest receives \$24. The third contest between the second victors and a team from the Senior Class, takes place about the middle of May, and the winners of the contest receive \$36. Winners of the prize of \$36 are excluded from further competition

Elinore Taylor Brewer Greek Prize. The Class of 1883 has contributed the sum of five hundred dollars, the income from which is annually awarded as a prize to that member of the Sophomore Class who has done the best work in the regular Sophomore Greek Course.

Samuel Garver Latin Prize. The income from a fund of \$500 established by Rev. Austin S. Garver, A.M., a member of the Class of 1869, in memory of his father, Samuel Garver, is annually awarded to the student who has made the greatest progress in Latin during his Freshman year.

Samuel Garver Greek Prize. The income of a fund of \$500 established by Rev. Austin S. Garver, A.M., a member of the Class of 1869, in memory of his father, Samuel Garver, is annually awarded to the student who has made the greatest progress in Greek during his Freshman year.

Kuhns History Prize. Due to the generosity of Rev. Luther M. Kuhns, Litt.D., Class of 1883, an annual prize of \$25 is awarded to that member of the Senior Class who has done the best work in History.

No student shall be eligible to any honor or prize unless he has had at our own College all the work required for the year or years for which the honor or prize is awarded, unless substitutions have been approved at the time by special Faculty action.

PHI BETA KAPPA.

A charter for a chapter of the Phi Beta Kappa honor society was granted to Gettysburg College in September 1922, and the chapter, known as the Iota Chapter of Pennsylvania, was organized January 11, 1923. The chapter elects into its membership each year not to exceed three members of the Junior class in college and a number from the Senior class not exceeding 15% of the whole class and not more than 25% of the number of candidates for the degree of A. B. in the class. The selection from the class is made from those having the highest scholastic standing. Only those members of the Junior and Senior classes are eligible for election who, in addition to good moral character, have a high scholarship record, and who are candidates for the degree of A. B. or B. S. and have satisfied all the requirements of the degree to date and have taken in residence at Gettysburg College $\frac{3}{4}$ of their work to date. Although the election is ordinarily from the candidates for the A. B. degree, candidates for the B. S. degree are not ineligible, but no one is eligible who has not shown evidence of broad general culture. In making the selection of members, rank in class, literary and other similar college activities, qualities of leadership, and promise of usefulness are taken into consideration.

The Phi Beta Kappa Society, which was first organized at William and Mary College, Dec. 5, 1776, stands for the highest ideals of scholarship, and embodies the spirit which is historically that of the American College—that of liberal education as distinguished from professional or technical training; and in its elections to membership recognizes those students who give the greatest evidence of devotion to these ideals and imposes upon them the duty of carrying them and the ideals of integrity, honor, and usefulness into the com-

mon life of humanity outside the school. In those colleges and universities where a chapter exists, election to Phi Beta Kappa is considered the first of all honors.

SCHOLARSHIPS AND AIDS FOR STUDENTS.

Every student joining the college unit of the Reserve Officers' Training Corps (R. O. T. C.) receives very substantial financial benefits. As outlined in detail on page 96 every member of the R. O. T. C. receives during his college course five complete uniforms (each including also cap and shirt) valued at \$200. The cash paid direct to the student by the War Department for text-books, allowances for board, pay and traveling expenses is \$340.40. Hence the total financial benefits to each student during his college course amounts to \$540.40. As this military course, which itself is of great educational value, can be pursued without in any way interfering with the required studies in any particular course it should not only be attractive to all students but should make a very special appeal to those who are in need of financial assistance.

Endowed scholarships worth \$30 each, and a limited number of scholarships worth \$50 each, are awarded annually to deserving students by the Finance Committee of the Board of Trustees. All applications for these scholarships must be made in writing and must state in full the reasons for the request. Such applications must be handed to the President before October 1 of the college year.

Mr. and Mrs. C. J. Kirschner, of Hazleton, Pa., have established a scholarship endowment fund of \$10,000 to perpetuate the memory of their son, Alvan Ray Kirschner, who lost his life in the world war. The income from this fund is divided into two scholarships which are awarded to students under certain conditions which give

preference to those from Hazleton and vicinity. Applications for the use of these scholarships should be made directly to Mr. C. J. Kirschner, Hazleton, Pa.

Rev. Sydney E. Bateman, M.D., Class of 1887, has established a scholarship fund of \$500, the income from which is awarded each year to a needy student preparing for the ministry. Applications for this scholarship must be handed to the President before October 1 of the college year.

The Parent Education Society controls eleven scholarships, worth \$30 each, which are open to young men preparing for the ministry in the Lutheran Church. Application for the use of these scholarships should be made to the Chairman of the Scholarship Committee, Rev. J. A. Singmaster, D.D., LL.D., Gettysburg, Pa.

A scholarship of \$350 is granted annually to an advanced student who has shown special aptitude and excellence in the study of Chemistry. The money is paid thru the College by the Du Pont de Nemours Company in recognition of the splendid work done in the past by our former graduates employed by that concern.

A number of other \$30 scholarships have been endowed and are controlled by congregations, synods, and individuals. The Gettysburg School Board controls a \$50 scholarship established by C. W. Thompson, Esq., of Lebanon, Pa. The authorizations from those controlling these scholarships must be handed to the President before Oct. 1 of the college year.

The children of clergymen are each annually awarded a scholarship amounting to one-half of the Tuition and General Fees, that is, \$75, on application to the President before Oct. 1 of the college year.

A considerable number of students earn part of their college fees by caring for class rooms and laboratories, and upperclassmen serve as student laboratory assistants. Four students are employed as swimming instruc-

tors. Thirty-five cents an hour is allowed for these services.

Four upperclassmen are employed as proctors in the college dormitories, two serve on the Chapel Orchestra, one cares for the Reading Room, one looks after the athletic equipment, one sends out personal news items and another athletic news to newspapers, and one serves as Assistant in the Registrar's office.

The above student appointments are made by the Faculty; applications for such positions must be in writing on a form provided for that purpose by the Registrar and must be in the hands of the President before May 1 of the preceding college year.

There are many opportunities in the town of Gettysburg for students to earn money. The college authorities will be glad to assist those who desire such outside employment. Many students skilled in the use of musical instruments earn money by playing at various functions in the town and in the College. Some of the students are granted allowances by the Athletic Council for work in the Gymnasium and on the Athletic Field. A number of students earn their board by managing student eating clubs, of which there is a large number, or by waiting on the table.

Any student wishing to engage in business or to undertake employment during term time is required to obtain permission from the President. Any violation of this rule is regarded as a misdemeanor.

TREASURER'S BILLS.

The bills of the College Treasurer are made out for each semester and include half of each item for the college year. The bill for any semester must be paid within six weeks from the opening of that semester. If not so paid, interest will be charged on all bills overdue.

No student will be graduated until all financial obligations to the College and for class publications and other student interests are settled except when a student has registered a timely protest with the Faculty and the claim for relief has been allowed. No credits for college work done or statement of honorable dismissal will be certified to until these financial obligations have been paid.

COLLEGE FEES.

A Registration Fee of \$5 is required of all students on entering College for the first time and is payable to the Registrar. For the regulations in regard to registration see page 22.

The annual charge for Tuition and General Fees is \$150. This charge is made for instruction; lectures; upkeep and use of grounds and buildings (does not include dormitory room rent); athletic activities (including free admission to all college athletic games played in Gettysburg); use of library, reading rooms, and gymnasium; health and sanitation service; debating and oratorical contests; and a free subscription to the "Gettysburgian."

An extra tuition fee of \$5 is charged for each semester hour of college work in excess of 18 per semester, or in excess of the number of semester hours required of the student if that be more than 18.

Students not candidates for a degree and pursuing undergraduate or graduate studies which total less than 16 semester hours must pay a \$15 Tuition and General Fee per course of three semester hours each semester.

Candidates for a Master's degree are required to pay a Registration Fee of \$5 and \$5 per semester hour for Tuition and General Fees.

An annual fee of \$5 is charged for the use of the swimming pool in the Robert Weidensall Y. M. C. A. Hall.

ANNUAL LABORATORY FEES.

Based on not more than three laboratory periods for week these are:

Biological Laboratory	\$16.00
Chemical Laboratory	20.00
Physical Laboratory	15.00
Mineralogy for the course	10.00
Botany for the course	5.00
Bacteriology for the course	15.00

In addition to the Chemical Laboratory Fee a charge is made for apparatus broken or not returned in good condition. In the Physical Laboratory an additional charge is made for material used and any damage done to apparatus.

ANNUAL ENGINEERING FEES.

Freshman year	\$10.00
Junior year.....	15.00
Senior year	15.00
Summer Course in Surveying	10.00

In addition to these engineering fees a charge is made for apparatus broken or not returned in good order. A charge is also made for engineering apparatus used by non-engineering students.

BOARDING.

The College does not maintain a dining hall. The students receive excellent board in clubs and with private families at a cost of from \$4.50 to \$5.75 per week.

ESTIMATED COST OF A YEAR IN COLLEGE.

The expenses of a college student depend largely on the training and habits of the individual. To aid the stu-

dent rooming in a College dormitory to calculate the probable cost of a year in college at Gettysburg the following estimates are submitted:

(A). ITEMS ON COLLEGE BILL.

	Low.	Moderate.	Liberal.
Tuition and General Fees	.\$150.00	\$150.00	\$150.00
Room rent and heat (half dormitory room)	11.00	30.00	50.00
Electric light (half room) . . .	3.15	3.15	6.30
Payable to College	\$164.15	\$183.15	\$206.30

(B). OTHER EXPENSES.

Board for 35 weeks	\$157.50	\$183.75	\$201.25
Laundry*	20.00	25.00	30.00
Books and stationery	20.00	25.00	30.00
Est'd cost for college year	.\$361.65	\$416.90	\$467.55

To the above should be added laboratory or engineering fees in case the student takes courses involving such charges. Nor does it include the cost of furniture, swimming pool fee, clothing, railway fare, and other personal expenses.

COLLEGE DORMITORY ROOMS.

The following rules govern the assignment of dormitory rooms in Pennsylvania Hall, Cottage Hall and McKnight Hall.

*By sending their laundry home each week by parcel post many students save part of this expense.

Non-resident students are required to room in the college dormitories unless excused by the Committee on Dormitory Rooms. A non-resident student rooming outside of the dormitories will be charged \$7.50 each semester for this privilege unless there are no dormitory accommodations available or for special reasons this charge is remitted by the Faculty.

No reservations of rooms beyond the actual needs of the students are permitted. No student is allowed to change his room or to take in a roommate without permission from the Committee on Dormitory Rooms and if allowed a new rental contract must be signed.

RESERVATIONS OF ROOMS BY MEMBERS OF THE STUDENT BODY.

All rooms are declared vacant May 1 of each year. On this date the reservation of rooms for the next college year begins. Students desiring to remain in the rooms that they have been occupying have that right provided they make application and sign the rental contract at the Registrar's office before May 8. After this date all rooms not reserved in this manner are open for assignment, on the days announced by the Registrar, to the members of the several classes in the following order: Juniors, Sophomores, Freshmen. Within the respective classes the order of choice and assignment is determined by lot conducted by the Registrar.

No assignment of any room in any dormitory is made to any student except on a payment of five dollars, said payment to be applied on the rent of the room and to be forfeited in case the student fails to keep his engagement to take the room.

RESERVATIONS OF ROOMS BY NEW STUDENTS.

Rooms not reserved before May 15 will be available for

assignment, in order of the applications, to new students desiring to enter College the following September. The Registrar will reserve rooms for such students by correspondence if he is informed, at least approximately, of the kind of accommodations desired and whether or not a roommate is wanted. A deposit of five dollars is required from every new student reserving a room, said deposit to be applied on the rent of the room and to be forfeited in case the student fails to keep his engagement to take the room. The rental contract involved may be signed at any time before the opening of College. Applications for such reservations should be made as early as possible both for the purpose of securing a satisfactory room and to relieve the rush at the opening in September. A key deposit of one dollar is also required.

DORMITORY ROOM FURNITURE.

All rooms are furnished by the occupants. Students graduating from College or changing from one room to another usually sell their furniture to the new occupants at a fair price mutually agreed upon. This plan is regarded highly desirable by the college authorities. The Finance Committee of the Board of Trustees has engaged a competent appraiser who has no direct interest in connection with the college to determine the value of the furniture in any room when asked to do so. When students are unable to agree on the price for the furniture in a room, this appraiser will serve as an expert to adjust the matter. Any failure to make an adjustment on the basis of the findings of the appraiser must be referred to the Committee on Dormitory Rooms for final action.

ROOM RENT.

The charge for room rent, including steam heat, is

given below for each room in the above-mentioned dormitories, and covers the period commencing the Monday before College opens in September and ending the Friday after College closes in June, with the exception of the Christmas vacation. The occupants of a room pay equal parts of the rental. Not more than two students are allowed to occupy one room or suite except in the case of some of the larger suites. In Pennsylvania Hall the designations are E for east division, M for middle division, and W for west division. McK indicates McKnight Hall; C, Cottage Hall.

\$16.00: 354 C.

\$22.00: 255, 256, C.

\$24.00: 106, 108, W; 120, 122, 124, E; 357, 358, 360, C.

\$26.00: 105, 107, W; 119, 121, 123, E.

\$30.00: 353, 362, C.

\$32.00: 103, W; 125, E.

\$34.00: 101, W; 127, E.

\$38.00: 340, McK.

\$44.00: 111, 117, 118, M; 140, McK; 361-363, C.

\$46.00: 104, 126, W.

\$52.00: 206, 208, 306, 308, 406, 408, W; 210, 410, M; 220, 222, 224, 320, 322, 324, 420, 422, 424, E.

\$54.00: 205, 207, 305, 307, 405, 407, W; 219, 221, 223, 319, 321, 323, 419, 421, 423, E; 335, 336, 343, 344, McK.

\$56.00: 153, 359, C.

\$60.00: 240, McK.

\$62.00: 337, 338, 341, 342, McK.

\$68.00: 204, 304, 404, W; 211, 217, M; 226, 326, 426, E.

\$72.00: 202, 203, 302, 303, 402, 403, W; 225, 228, 325, 328, 425, 428, E.

\$74.00: 201, 301, 401, W; 227, 327, 427, E; 157, 158, C.

\$76.00: 233, 234, 245, 246, McK.

\$78.00: 257, 258, C.

\$80.00: 154, and suite 252-254 C.

\$88.00: 159, 160, 259, 260, C.

\$96.00: 218, 312, 318, 412, 418, M; (suites of two rooms).

\$100.00: 161, 162, C; 134, 146, McK; suite 251-253, C.

\$104.00: 133, 137, 138, 141, 142, 145, McK.

\$110.00: 411, 417, M; (suites of two rooms).

\$112.00: suites 331-333, 332-334, 345-347, 346-438, McK.

\$118.00: 242 and 244, McK; 241 and 243, McK; 235 and 237, McK; 236 and 238, McK; (suites of two rooms).

\$124.00: 261-263, 262-264, C.

Rooms 111, 117, 118, 218, 312, 318, 411, 412, 412 417, 418, M, include a large study and a good-sized bedroom. Odd numbers are on the south side of the building in Pennsylvania Hall and on the west side of the building in McKnight Hall.

The cost of electric light, eighteen cents per week for each 40-watt Tungsten lamp or its equivalent, is charged on the regular College bills. Any damage done to a room will be charged up against the occupants. Only the Superintendent of Buildings and Grounds is allowed to change the locks on doors. The rooms must at all times be accessible to the college authorities. The occupants of a room will be held personally responsible for the order maintained in that room. Students disregarding Faculty or Student Council Dormitory Regulations will forfeit their rights as occupants. A janitress is employed by the College to clean thoroly and set to rights every student room in the dormitories periodically; this service is without cost to the students. The Registrar will be glad to furnish any additional information that may be desired about dormitory rooms as well as rooms in the homes of families living in the town.

STUDENT PROPERTY.

The College disclaims all responsibility for the care or safety of any property belonging to students. With the exception of furniture, mattresses, tacked-down carpets and window shades, any student property left in a dormitory room during the summer vacation must be securely packed in barrels or boxes distinctly marked with the owner's name and the number of his room. No property should be left in closets or bureau drawers. This is to insure against possible loss and to facilitate the cleaning of the rooms.

MATERIAL EQUIPMENT.

LIBRARIES.

The College Library contains about 35,000 volumes, besides numerous unbound pamphlets. It is a regular depository of the United States Government and the Government of the State of Pennsylvania. Several hundred volumes of public documents are annually received from these sources.

The Library is available to all students under established regulations. During term time it is open for consultation and the drawing of books eight hours each week day, except on Saturday, when it is open for four hours. The librarian and his assistants are always ready to aid the students. The opportunities for the use of the Library are continually being increased by means of a systematic organization and the building up of a complete and attractive library of reference.

Mrs. Edwin Swift Balch, of Philadelphia, has donated \$2,000 for the establishment of the "James Macfarlane Fund, Class of 1837," the annual income from which is expended in the purchase of books on geology and kindred subjects. Mrs. Balch is the daughter of James Macfarlane and established this endowment in his Alma Mater to commemorate the centenary of his birth Sept. 2, 1819, at Gettysburg. James Macfarlane received the degrees of A.B., M.A., and Ph.D. from Gettysburg College. He was a member of the bar, an engineer, a geologist, and the author of several scientific books and many scientific articles.

In the same hall with the College Library are the Libraries of the two Literary Societies. They comprise a large number of well-selected and standard volumes,

which are annually increased thru the income of separate funds. The Philomathean Library contains at present 7,200 volumes; the Phrenakosmian Library over 7,850 volumes. These libraries are accessible to the members of the societies under their respective regulations, and are open for the issue of books on Wednesday at 4 P. M., and Saturday at 11 A. M., during term time. Several departmental libraries are also maintained.

LABORATORIES.

The Reading Rooms in the Library and the Weidensall Y. M. C. A. Hall are well supplied with daily and weekly papers and leading literary and scientific periodicals, thus enabling the student to become acquainted with current events and contemporary scientific, literary, and other cultural movements.

READING ROOMS.

The Biological Laboratories on the second floor of Glatfelter Hall consist of two large, well-lighted, communicating rooms. They are supplied with twenty-five fine microscopes, and all the other appliances necessary in carrying on the work of the course outlined in the Department of Biology.

The Chemical Laboratories in the Chemical Laboratory Building, as described on page 130 are amply equipped with all the conveniences and apparatus and supplies that are desirable in the requirements for general and analytical chemistry, including work in organic preparations, proximate analysis, examination of water, and other special subjects.

The Physical Laboratory. The lecture room is provided with a large table with sink, water, gas, and electrical connections; apparatus supports, blackboard, charts, and black curtains and a hand-painted screen for

stereopticon work. The laboratories, comprising six rooms for general work, besides photographic dark rooms, store room, and storage battery room, and the lecture apparatus room are equipped with modern and carefully selected apparatus for both elementary and advanced work. Alternating and direct electric current is supplied at different points by means of a central switch board, a motor generator, and a storage battery. The apparatus includes a Geryk double cylinder oil immersion air pump, high grade balances, spectrometers, photometer, and stereopticon; and in electricity, D'Arsonval galvanometers, Wheatstone bridges, potentiometer, voltmeters, standards of resistance, capacity, electro-motive force, and self-induction, ammeters and voltmeters for direct and alternating currents (all of the best make); a complete dynamo and motor set illustrating different styles of direct and alternating current machines (induction, synchronous, three-phase, etc.); an induction coil giving an 8-inch spark, high frequency coils, electric wave apparatus, and telegraph, telephone, and wireless telegraph outfits, and Kathode ray and X-ray tubes.

ENGINEERING EQUIPMENT.

The equipment in the Engineering Departments is modern and adequate and is being augmented as necessity demands.

Instruction in mechanical drawing is given in a large room in Thaddeus Stevens Hall. The department is well equipped for the purpose and is supplied with drawings illustrating the best recent practice.

The surveying equipment is adequate for the purposes of practice in all kinds of surveying. It includes, besides a number of transits and levels, a plane table, traverse board, sextant, planimeter, level and stadia rods, tapes, etc.

The facilities for materials testing include a 100,000 pound Riehle universal testing machine, with the necessary measuring instruments for the determination of the physical properties of steel, cast iron, wrought iron, timber, concrete, etc. There is also a cement laboratory, with a Riehle tensile briquette machine of 1,000 pounds capacity, and a variety of other apparatus for making all the standard physical tests of cement, sand, and mortar.

The pattern shop, located in a commodious room in the basement of Glatfelter Hall, is supplied with speed lathes and an oilstone grinder, also numerous benches and hand tools, all of the most modern type. In addition there has been provided foundry equipment of an elementary nature for illustrating the fundamental principles of moulding. The College has installed a medium-sized engine lathe, a drill press, emery wheels, and numerous vises and bench tools. A portable forge with the usual collection of small tools has been added.

Thru the courtesy of manufacturers in the vicinity of Gettysburg, arrangements have been made whereby students may spend a short time as apprentices in well-equipped machine shops. By such co-operation it is hoped that the students' knowledge of manufacturing processes will be increased to a greater extent than would be possible in a course of shopwork conducted entirely in a college laboratory.

An electrical engineering laboratory has been established. There are facilities for work in both direct and alternating current phenomena. The apparatus includes several direct current motors and generators, a rotary converter, a synchronous motor, several polyphase and single phase induction motors, a number of transformers, and an assortment of direct and alternating current measuring instruments.

In connection with the College heating and pumping plant there is available for commercial testing such

equipment as boilers, a gas engine, and two pumps. As necessity demands further apparatus will be added.

MUSEUM.

The Museum contains varied collections of fauna and flora and minerals, all of which are freely used in instruction. The Mineralogical Cabinet contains over 6,000 specimens, including not only very full suites of the more common and more important minerals, but also good specimens of many of the rarer minerals. The collection in Lithology numbering 3,000 specimens, and of iron in Metallurgy, have, by recent additions, become fairly representative in the most important departments of these sciences. The Botanical collection of 6,000 specimens, mainly presented by Miss Elizabeth C. Morris, of Germantown, Pa., is well arranged and contains a full representation of American Flora. A beginning has been made of a Chemical Museum—to contain specimens of raw and manufactured materials in chemical industries. Friends of our institution can greatly aid us by making additions to these collections.

BUILDINGS.

Pennsylvania Hall, erected in 1836-38, was remodeled and improved in 1889. It contains ninety rooms for students, many of them *en suite*, so that those who may wish to do so can have separate study and sleeping rooms. The rooms are all heated by steam and lighted by electricity. Sinks with running water are located in every floor, and on the first, second, and third floors are complete lavatories with hot and cold water connected with the College system of water-works.

McKnight Hall, erected in 1897, is a dormitory building of three stories accommodating about fifty students.

It is named in honor of Harvey W. McKnight, D.D., LL.D., Class of 1865, Fourth President of the College. It is finished entirely in hard wood, is heated by steam, lighted by electricity, has hot and cold water on each floor, and lavatories in convenient places. The first floor has eight rooms with spacious closets. These rooms may be used by one or two occupants, as preferred. On the second floor all rooms are *en suite*, each suite consisting of a study with one bedroom or two. These are also provided with closets. The third floor is divided into sixteen single rooms.

Cottage Hall was built in 1868 as a double house for professors. In 1914, because of the great need for more dormitory accommodations due to the increase in the number of students, it was transformed into a College dormitory of thirty rooms. As it is very advantageously situated on the campus near the main gateway, and is fitted up with all modern conveniences; rooms in this building are among the most desirable to be had.

Glatfelter Hall, erected in 1888-89, is used for general college purposes. It is named in honor of the late P. H. Glatfelter, of Spring Grove, Pa., a former trustee, who with his family has contributed largely to the College. On the first floor are the library and reference rooms, the Registrar's office, and recitation rooms. The second floor contains five recitation rooms, the biological laboratories, and a large Social Hall. A large museum and four recitation rooms are on the third floor. In the north wing of the third floor is the hall of the Philomathean Literary Society; in the south wing the hall of the Phrenakosmian Literary Society. In the basement are the laboratories of the Department of Physics with the recitation rooms directly above. The newly-equipped Engineering Laboratory and Shops occupy the entire north wing of the basement.

Thaddeus Stevens Hall, erected 1867-68, is a three-

story brick building fronting on Carlisle street. It is heated by steam and lighted by electricity, and supplied with pure artesian water, hot and cold. On the first floor are class rooms and the R .O. T. C. armory. In 1920 this building was very materially improved, in particular the second and third floors, which were entirely remodelled into a thoroly up to date dormitory for boys attending Gettysburg Academy.

The Brua Memorial Chapel, erected in 1889-90, is the gift of the late Col. John P. Brua, U. S. A., as a memorial to his parents. This building is used for daily prayers, for Commencement exercises, lectures and other occasions requiring a large audience room.

The Chemical Laboratory is a frame building, erected in 1872 and in 1890 converted to its present use. It contains on one floor a large lecture room, an office, store-rooms, chemical-room, balance-room, and three laboratories—providing for two hundred and sixty persons working individually. The building is fitted with the most approved appliances; gas and water at each desk; there are ample hoods, a water-distilling apparatus and large sand bath, and other necessary apparatus. The balance-room contains balances set on pillars especially built for the purpose. In the basement and in the attic are store-rooms. On account of the recent large increase in the number of students an addition to the Chemical Laboratory was built in 1916.

The Astronomical Observatory, erected in 1875, is furnished with an achromatic telescope having an object glass of six and one-half inches, with a transit instrument, chronometer, and other astronomical appliances.

The Gymnasium is a substantial brick structure of two stories, with a gallery on the second or main floor. This floor is devoted to basket ball activities and to military and physical training classes. The Medical Director's office is also located here, where all physical examina-

tions are made. The main portion of the first floor is used by the R. O. T. C. unit for the exhibition of army equipments, military instruction and rifle practice. A dressing room is also located on this floor.

The Gymnasium is open every week day from 10 A. M. to 11 P. M., and the time is apportioned between regular class practice, general practice, and games.

The Robert Weidensall Y. M. C. A. Hall is now completed. It is located immediately north of the Chemical Laboratory and is built of brick, colonial style. On the first floor the two main entrances, one from the east and the other from the west, admit to a large and attractive lobby and reception room. Here students meet for social intercourse and entertain visiting members of their families and friends. Adjoining these is a Ladies' Rest Room for the accommodation of women visitors. The College Reading Room, the Recreation Room, a kitchenette, and the Y. M. C. A. are located on this floor. On the second floor there is a commodious assembly room especially designed for prayer services and other religious meetings for students as well as the Bible Study Room, the Mission Study Room, a Committee Room, and living quarters for the resident Y. M. C. A. Secretary. The chief feature of the basement is a swimming pool 20 x 60. There is also a locker room, a shower room, a room for the heating and filtering plant, and a room for the attendant. There are lavatories conveniently located on each floor. The building is named in honor of Robert Weidensall, LL.D., Class of 1860, the cost of construction being assumed by the Woman's League of Gettysburg College.

The Boiler House supplies the steam required for heating all the College buildings.

Besides these buildings there are on the campus the President's house, four halls erected by Greek Letter Societies, and two houses for janitors.

A professor's house, donated by Professor George D. Stahley, M.D., class of 1871, has been erected on College ground, corner of Carlisle and Stevens Streets.

Nixon Athletic Field. Immediately north of the College buildings is the athletic field, which is carefully graded and securely inclosed and covers an area of over seven acres. It affords room and facilities for all kinds of out-door sports. To the west of the field more than a dozen tennis courts have been laid out for the use of the students.

CLASS MEMORIALS.

As testimonials of their love for their Alma Mater and substantial tokens of gratitude for what she has done for them, the classes indicated below have donated memorials to her as follows:

Class of 1883. On the thirtieth anniversary of their graduation the members of this class donated \$500 to the College, the income from which is awarded annually, under the name of the Elinore Taylor Brewer Greek Prize, to that Sophomore who does the best work in the regular Greek class.

Class of 1893. On the twentieth anniversary of their graduation the members of this class presented the fine memorial gateway at the main entrance of the College campus. The approximate cost of this imposing and artistic structure was \$1500.

Class of 1899. On the fifteenth anniversary of their graduation the members of this class presented the furnishings of the class-room for the Department of Philosophy and Education and a departmental library for that department. This equipment, costing nearly \$600, was presented as a Class Memorial to their class-mate, the Rev. Jacob Hiram Straw, who died on the African mission field.

Class of 1902. This class presented the College a concrete walk extending from the entrance into McKnight Hall to the driveway in front.

Class of 1906. This class gave a concrete walk that runs across the entire front of Pennsylvania Hall connecting the various entrances.

Class of 1907. This class paid for the wiring of all the halls and rooms of Pennsylvania Hall for electric light.

Class of 1912. This class erected the handsome light post in the center of the campus, with its cluster of five large electric light globes, and put down a concrete walk extending from this central point to Pennsylvania Hall, much of the actual labor being done by the members of the class.

Class of 1913. The gift of this class was a concrete walk which extends from Pennsylvania Hall to Glatfelter Hall connecting with the Gymnasium, and widening into a plaza in front of the entrance to Glatfelter Hall, with two handsome electric lamp posts on the two outer corners of the plaza. This class also put down part of the concrete walk in front of Thaddeus Stevens Hall.

Class of 1914. This class gave a concrete walk which reaches from the main gateway to the center campus light, together with three walks extending to Brua Chapel.

Classes of 1916 and 1917. These two classes presented a concrete walk reaching from Thaddeus Stevens Hall to the corner of Carlisle and Stevens Streets. All labor of putting down this walk was done by the members of these classes.

Class of 1921. This class paid for the splendid concrete walk and steps extending from the main campus gateway to Cottage Hall.

Class of 1922. The cases in the Robert Weidensall Y. M. C. A. Hall containing the athletic trophies won by Gettysburg College students were donated by this class.

STUDENTS' INTERESTS.

LITERARY SOCIETIES.

Two literary societies are connected with the College, the Philomathean and the Phrenakosmian. These exert a remarkably favorable influence on the intellectual and social culture of their members. The exercises consist of essays, orations, debates and music. The acquaintance with parliamentary law and the practice in clear thought and effective speech which are here gained, make these societies excellent schools in good citizenship. Each society has a specious hall on the third story of Glatfelter Hall, conveniently and handsomely furnished. Their sessions are held every Friday evening. Every student should become an active member in one of these societies.

DEBATES AND ORATORICAL CONTESTS.

During the year there are debates between teams representing the different classes, also between teams of the literary societies. The College is also represented in the Intercollegiate Oratorical Union, being associated with Lafayette, Franklin and Marshall, Ursinus, Muhlenberg, and Swarthmore in an annual oratorical contest.

COLLEGE Y. M. C. A.

The Young Men's Christian Association, an organization of students and faculty, is an active agent in promoting religious interests among the students. The Association promotes such activities as Bible Study, Mission Study, Religious Meetings, a Lyceum Course, Campus

Service, and social activities. The Y. M. C. A. is not only a clearing house for all religious organizations in the College, but it also supports every movement for the betterment of the college morale. With the splendidly equipped Robert Weidensall Y. M. C. A. Hall and the services of a full time secretary it functions as a religious and social center for the entire student body.

MUSICAL ORGANIZATIONS.

Active and well trained choral and instrumental musical organizations consisting of a band, an orchestra, a guitar and mandolin club, and a glee club, add to the pleasure of their members and of the audience at their public exhibitions. These clubs usually take a ten days' trip during the winter.

ATHLETICS.

The various college athletic sports, football, baseball, basketball, field sports and tennis, are well organized. They are recognized as an important part of college life and receive encouragement, but under such regulations as it is believed will prevent them from becoming a possible source of demoralization to the student body and from interfering with the primary work of the institution. The plan under which these sports are conducted gives the opportunity and encourages every student to take part regularly in some out-door exercise.

Students are permitted to participate in any or all branches of athletics unless parents or guardians have notified the Faculty to the contrary.

PUBLICATIONS.

THE GETTYSBURG COLLEGE BULLETIN is published by the College four times during the year.

"The Gettysburgian," under the control of the student body, is published weekly, and makes a speciality of College and alumni news.

"The Y. M. C. A. Hand-Book," issued at the opening of each college year, gives valuable information and suggestions to incoming students.

"The Spectrum," an annual publication by the Junior Class, contains pictorial representations of the College with its various organizations and surroundings, and useful information about students and alumni.

All the periodicals aim at enlarging the means of communication between the College and its graduates, former students and friends. These enterprises are cordially commended to the patronage of those interested in the welfare of the institution.

STUDENT COLLEGE REPRESENTATIVES.

A student entering Gettysburg College from another college is required to be registered as a student here for a period of one calendar year before he is permitted to take part in intercollegiate athletics.

Any student whose work, reckoned from the beginning of the semester, is reported to the Faculty at any time during the semester as being below Grade D in two or more courses, will be debarred (as long as this condition exists) from representing the College in any student organization.

ADDRESSES OF ALUMNI.

The College is anxious to keep in touch with its alumni and ex-students not graduates, and requests that all changes in address be sent to the Registrar.


TEACHERS.

The College course for teachers is arranged to meet the requirements of the School Code of Pennsylvania, thus securing the State Life Certificate for the graduates of the College. See page 63. The attention of school boards, and others desiring teachers, is called to the fact that it is frequently in the power of the Faculty to recommend suitable candidates. Many graduates successfully fill important positions in public and private institutions. The College maintains a Bureau of Appointments for the purpose of assisting its alumni who are in the teaching profession to get in touch with vacancies, and to assist schools in finding teachers. The service is free. The Bureau tries to use its best judgment in recommending men and places adapted to each other.

The Directors of the Bureau are Professors C. F. Sanders and Frank H. Kramer.

FORM OF BEQUEST.

I give, bequeath, and devise to "Gettysburg College," in the State of Pennsylvania, and its successors and assigns forever, the sum of —— (or shares in the bank of ——, or any other personal property or real estate, as the case may be), to be applied to the Endowment Fund of the Institution.

 A bequest to a benevolent corporation, to be legal, must be made, in Pennsylvania at least thirty days, and in New York at least sixty days, before the death of the Testator; and should be signed by two witnesses not officially related to the College.

ALUMNI ASSOCIATIONS.

The Alumni Association of Gettysburg College holds

its regular annual meeting Tuesday afternoon of Commencement Week. In 1876 the Board of Trustees granted the Association the privilege of nominating six of the number to membership in the Board, and of maintaining this number as vacancies occur.

The officers of the association are:

President:

GEORGE H. HUMMEL, '13

Care Maple Press Co., Pork, Pa.

Vice-President:

SAMUEL B. MEISENHOLDER, '04

Security Trust Building, York, Pa.

Secretary:

PAUL B. RICE, '11

906 Kunkel Building, Harrisburg, Pa.

The various distrist alumni associations are active and potential factors in promoting the interests of the College and bringing the College to the notice of prospective students.

GETTYSBURG ACADEMY.

This is a boarding school offering a four year course for students preparing for college and also a general or academic course for students who do not expect to enter college. As a training school for boys Gettysburg Academy seeks to cultivate habits of neatness and punctuality as well as industry and accuracy in study. It attaches the greatest importance to the culture of the heart and to the development of those manly virtues that make the truly Christian gentleman. The location, equipment, environment and ideals of the school are favorable for such training.

HOME LIFE.

It is the purpose of those in charge to give every student a happy, healthful home life. The Masters live in the school with the boys and are intimately associated with them both in their work and in their play. The large Living Room with its cheerful fire-place and comfortable furnishings is the gathering place of the boys when not on duty. Here is cultivated the "family spirit" of the school.

THE MAIN BUILDING.

A fine new structure known as The Main Building stands on the north-east corner of the Academy Campus. This building is of beautiful, Colonial architecture and fronts one hundred and fifty-six feet on Carlisle Street. Into its construction and equipment have gone the very best and latest ideas that science, sanitation and school

experience can give. The building is heated by a vacuum steam system from the central plant and lighted thruout by electricity. The plumbing is of the most approved sanitary design.

The first floor contains large, airy class-rooms, lavatory with hot and cold water supply, shower baths and a locker-room. There are also a number of rooms for students.

The second or main floor contains the large Living Room beautifully finished in Colonial style with an ample fire-place, tiled floor and comfortable furnishings. This provides a useful and delightful center for the school life. To the south of this is the large Chapel and Study Hall. Here are held the religious exercises, the literary society meetings and certain study periods. To the north is the Dining Hall with a capacity of one hundred boarders. Here the Masters and students take their meals together. On this floor is also the modern sanitary kitchen equipped with the best devices and machinery for the preparation of food. The table is abundantly furnished with wholesome, well-cooked food fresh from the rich farming and fruit country of the vicinity. Only pasteurized milk and cream are served; only pure filtered water and manufactured ice are used. The excellence and cheapness of food supplies in Adams County make it possible to furnish a very good table at very low rates. Near the Living Room are the office of the Headmaster, the study-hall for girls who attend as day students, and a cozy reading room. The reading room is supplied with a large number of magazines and papers and is open every day for the use of the students.

The entire third floor contains rooms for the students and Masters. There are single and double rooms. On this floor there is another lavatory with hot and cold showers, drinking-font, and all modern toilet conveniences.

THADDEUS STEVENS HALL.

This building has been completely remodeled and converted into a modern dormitory. The second and third floors have been torn out and rearranged into large airy rooms, single and double, facing east and west. This building affords additional accommodations for thirty-one students and two Masters.

THE JUNIOR DORMITORY.

A lease has been secured on a large, comfortable house and grounds just across the street and opposite the Main Building. Some of the rooms are very large and will comfortably accommodate three boys. Two boys will occupy the smaller rooms. The house has two bathrooms on the second floor and a lavatory on the first floor. Two Masters have charge of this dormitory where boys from twelve to fifteen years of age are placed. The Matron also gives these boys special attention. The house is heated by an efficient hot water system and is lighted by electricity. It also has large porches, cheery rooms, and has been newly furnished thruout. The annual rate for each boy in this dormitory is \$450.

ADMISSION TO COLLEGES.

Gettysburg Academy is an accredited secondary school. All colleges admitting students by certificate accept its scholarship credits for entrance.

EXPENSES.

The rate for boarding students for the full school year is \$375 or \$410 or \$450 according to the size and location

of the room selected. The school year is divided into two equal semesters as follows:

	Lowest	Minimum	Highest
First Semester	\$187.50	\$205.00	\$224.00
Second Semester	187.50	205.00	225.00
	<hr/>	<hr/>	<hr/>
	\$375.00	\$410.00	\$450.00

The amount of each semester bill is payable in advance at the beginning of the semester. *In case of withdrawal or suspension no payment will be accepted for less than one-quarter of the fees for the school year. If the student withdraws or is suspended before the end of the first half of a semester he will receive a refund of one-half the amount he has paid for that semester.*

These charges cover tuition, board, furnished room, heat, electric light, pew rent, use of athletic field and tennis courts, gymnasium, library, reading room, athletic fees, and swimming pool. The money received from the athletic fees (\$8 for each boarding student) is administered by a committee composed of faculty and student members for the benefit of the athletic interests of the school.

The Academy catalog containing cuts of the buildings and detailed information will be mailed upon request to

THE HEADMASTER OF GETTYSBURG ACADEMY,
Gettysburg, Pa.

STUDENTS IN COLLEGE 1922-1923

GRADUATE STUDENTS.

Non-resident.

Belknap, Carlyle Parks	Little Valley, N. Y.
Bowman, Earl Jerome	Gettysburg
Brenneman, John	York
Buhrman, Samuel Ross	Waynesboro
Derr, Roy Victor	Burnham
Foulk, Paul Levi	Littlestown
Frommhagen, Frederick Carl	Moundsville, W. Va.
Gehauf, Herbert Hensey	Frostburg, Md.
Gulck, Georg Krohn	Baltimore, Md.
King, Paul Edward	Littlestown
Lamont, Bruce Floyd	Hazleton
Lauver, Marie Nayetta	Altoona
Lauver, William Wieand	Altoona
Mummert, Lewis Jacob	Lewisberry
Overmiller, Howard Andrew	Spring Grove
Peeling, James Hedley	Stone Church
Rudisill, Harold Becker	Hanover
Schwartz, Wayne Timalium	Hanover
Wall, Fred Brice	Littlestown
Yagle, Jay Arthur	York
Zeiders, Ruth Viola	York

Resident.

Boyson, William Andrew	Hanover
Coble, Arthur Dewey	Williamson
Dulebohn, George Roscoe	Mason-Dixon
Falkenstein, Elwood S.	York
Keller, Lloyd Monroe	Shrewsberry
Klett, Guy S.	Gettysburg
Lerew, Joseph Austin	Gettysburg
Miller, Raymond C.	Gettysburg
Neal, Clarence Arthur	Waynesboro

Putman, Dwight Frederick	Somerset
Ryder, Charles Franklin	Chambersburg
Shaulis, Samuel Sylvester	Somerset
Sheads, Marjorie Loutse	Gettysburg
Sheads, Robert Emory	Gettysburg
Stewart, Margaret Armstrong	Gettysburg
Trauger, Wilmer Kohl	Ferndale
Wood, William Wallace	Arendtsville
Woodward, Luther Ellis	Walnut
Ziegler, Earl William	Gettysburg

SENIOR CLASS.

Class of 1923.

Candidates for the Degree of Bachelor of Arts.

Abbreviations: Business, Business Administration; C.E., Civil Engineering; E.E., Electrical Engineering; I.E., Industrial Engineering; M.E., Mechanical Engineering. Groups are indicated by the numerals 1 to 6.

Name	Major	Home
Buller, Edward Bard	English	Maytown
Diehl, William Clarence	1	Clear Spring, Md.
Erhard, William Melanchthon	1	Juniata
Eshenour, Theodore Wilbur	1	Harrisburg
Geiselman, Robert Clare	1	Gettysburg
Geiser, Dixon Hoover	3	Pen Mar
Hafer, Merle Bowers	1	Chambersburg
Hesser, Harvey Allan	2	Pine Grove
Kadel, Emma Susan ✓	2	Gettysburg
McAllister, Walter Ginder	2	Manheim
Mogel, Charles Luther	1	Newport
Naus, Alford Raymond	1	Berwick
Redcay, Mark Snoddy	1	Hanover
Rings, William Refus	1	Amlin, Ohio
Robinson, Ralph Carleton	Philosophy	Gettysburg
Roth, Lorene Marian	2	Gettysburg
Schoffstall, Emanuel Martz	3	Tower City
Sebold, Charles Earl	Philosophy	Dayton, Ohio
Simon, Carl Robert	1	Hagerstown, Md.
Stueber, Frederick	1	Pittsburgh

Name	Major	Home
Tucker, Edith Medora ✓	2	Bayonne, N. J.
Webner, Harvey Walter	1	Harrisburg
Wolfe, Charles Robert	2	Bloomsburg
Zerbe, Calvin Lee	2	Pine Grove

Candidates for the Degree of Bachelor of Science.

Altland, Noah Lavere	E. E.	York
Beckmeyer, David Edward	4	York
Briggs, Harold David	E. E.	Johnstown, N. Y.
Brininger, Robert Gilchrist	4	Harrisburg
Buehler, Guyon Edwards	4	Gettysburg
Dahmen, Carl Lloyd	6	Jamestown, N. Y.
Derr, George Harry	6	Salladasburg
Diehl, William Harold	4	Rockport, Ind.
Gamsjager, John Mathias	Mathematics	New Milton, W. Va.
Geiselman, Ralph Alden	E. E.	Hanover
Gilliland, James Patterson	6	Gettysburg
Glenn, James Donald	4	Fairfield
Gundel, Walter Peter	4	Columbia
Haehnlen, Frederick Philip	4	Gettysburg
Hill, Walter Henry	5	Hughesville
Hinman, Elmer Stephen	4	New Haven, Conn.
Howard, Charles Harold	6	Gettysburg
Hughes, Charles Glenwood	6	West Chester
Hummelbaugh, Katherine	6	Gettysburg
Kressler, Clemuel Litner	6	Bloomsburg
McDowell, James Waddell	6	Butler
Matsushita, James Shin	E. E.	Tokio, Japan
Meckley, Herbert Wertz	6	Hanover
Mertz, Harry LeRoy	E. E.	Baltimore, Md.
Miller, Charles Douglas	6	Pottsville
Moul, Clayton Edward	4	Menges Mills
Myers, Philip Trone	6	Westminster, Md.
Ott, Minter Morrell	5	Johnstown
Overcash, Chalice Seth	Education	Shadygrove
Page, Wayne Reyner	4	Clarion
Ports, Earl George	E. E.	Hanover
Ridder, John Edward	4	Gormanian, W. Va.
Ross, Frederick Uhler	6	Harrisburg
Saul, William John	3	Pine Grove
Sheely, William Clarence	6	Gettysburg
Shelley, Paul Webster	5	Mechanicsburg

Name	Major	Home
Shetter, Glenwood Benjamin	6	Gettysburg
Shue, Norman Elwood	4	Glenville
Sloat, Charles Allen	4	Orrtanna
Smith, Richard Manges	5	York
Smith, Theodore Paul	4	Bloomsburg
Snader, John Milton	4	Gettysburg
Snyder, Franklin Lloyd	4	Martinsburg
Sowers, Lowell Martin	4	Clearspring, Md.
Stoner, Clarence Emmauel	E. E.	Gettysburg
Stover, Ralph Hays	6	Gettysburg
Toms, Oscar Ray	6	Boonsboro, Md.
Uhler, Romaine Thompson	6	Lionville
Walter, Luther Brooke	C. E.	Reading
Winslow, Rosalie	6	Dayton
Wise, Richard John	4	Hanover
Wolfe, Spurgeon Louis	E. E.	Reisterstown, Md.
Woods, David Walker, Jr.	E. E.	Gettysburg
Wright, William Albert Earl	4	Harrisburg

JUNIOR CLASS.

Class of 1924.

Candidates for the Degree of Bachelor of Arts.

Bream, Anna Mary	Mathematics	Gettysburg
Bush, Horace Edgar	English	Lemoyne
Carlson, Harry Ludwig	Philosophy	McKeesport
Congleton, Vernon Jerome	Philosophy	Baltimore, Md.
Doub, Donald Joseph	Political Science	Middletown, Md.
Fink, William Conley	Mathematics	Emigsville
Fosnocht, Henry Allison	English	Joanna
Gohn, Herman Franklin	Greek	Harrisburg
Grimm, Emma Hermine Louise	German	Gettysburg
Hamsher, Reuben Harold	Greek	Fayetteville
Hansen, Christian Max	Greek	South Springfield
Hoover, Dorcas Grace	History	Carthage, Ill.
Ketner, Ruth Siess	English	Ellenville, N. Y.
Leese, Charles	History	Spring Grove
Menges, David Alvin	Greek	Menges Mills
Miller, Leon Clare	English	York
Morecraft, Edward Isaac	1	Bayonne, N. J.
Reaser, Catherine Grace	English	Gettysburg

Name	Major	Home
Reinartz, Frederick Eppling	Philosophy	East Liverpool, Ohio
Schantz, Bradford Toney	English	Schaefferstown
Senft, Cletus Arthur	Greek	York
Shearer, Francis Allen	Philosophy	York Haven
Smith, George Wellington	English	Mifflintown
Smith, Jessie May	German	York
Stavely, Lloyd Luther	Greek	Littlestown
Waybright, Walter Ernest	Philosophy	Gettysburg
Weaver, Lillian Augusta ✓	English	Gettysburg
Weikert, Treva Justine	English	Gettysburg
Yost, Hugh Eugene	Philosophy	York

Candidates for the Degree of Bachelor of Science.

Albright, Curtis Miller	4	Brodbeck's
Bailey, John William	Business	South Fork
Bamberger, Russell Elwood	Chemistry	York Haven
Baum, Carl Albert	Business	Lemoyne
Beers, Franklin Wayne	Chemistry	Indiana
Bender, Horace Lehr	Economics	Hanover
Bentley, Rolland Peters	Economics	Camp Hill
Blose, Ben Wade	6	Greensburg
Borland, James Ira	Chemistry	Indiana
Bream, Henry Trostle	6	Gettysburg
Carruthers, Fred Alton	Business	Mount Union
Clarke, Grace Dorothy ✓	French	Baltimore, Md.
Clutz, John Jacob	C. E.	Gettysburg
Collinge, Gilbert	C. E.	Woodcliffe, N. J.
Collins, Theodore	Economics	Wilmington, Del.
Deardorff, Charles Robert	M. E.	Gettysburg
Feldman, Edward Henry	C. E.	York
Gilbert, Calvin Rex	E. E.	Gettysburg
Graybill, Harry LaVerne	Biology	York
Grimm, Henry Jacob	6	Harrisburg
Grothe, Ernest Frederick Henry	M. E.	York
Hartzell, James Hamilton	History	York
Hutchinson, Hugh Gallagher	Economics	Kittanning
Lee, Elten Russell	E. E.	Everett
Lehman, Paul Edgar	Chemistry	Fayetteville
Livengood, Howard Lester	Physics	Birdsboro
Long, Frank Harvey Luther	Chemistry	Wormleysburg
MacMillan, Allen Gardner	C. E.	Dunmore

Name	Major	Home
McKenzie, Stewart George	Chemistry	Fayetteville
Mickel, Harry Fries	E. E.	Bridgeton, N. J.
Morris, Robert Means	Political Science	Gettysburg
Moyer, Grace Lillian ✓	Chemistry	Palmerton
Munshower, Carl Wallace	I. E.	Norristown
Pfeffer, Beatrice Otelia	French	Gettysburg
Phillips, Leon Altmiller	M. E.	Hazleton
Plowman, Walter Schmucker	Economics	Hanover
Reese, George Edmund	Chemistry	Hanover
Reiter, Edward Richard	Business	Berwick
Richter, Lewis Herman	M. E.	West Haven, Conn.
Rosser, Everett Alfred	Business	Oliphant
Roth, Harold Shearer	Chemistry	Gettysburg
Schildnecht, Page Milburn	Biology	Hagerstown, Md.
Shambach, Franklin Melanchthon	Philosophy	Baltimore, Md.
Shearer, Harold Theodore	E. E.	Harrisburg
Sheely, Harry Ross	Economics	Gettysburg
Slaybaugh, Carl Ephraim	C. E.	Biglerville
Smith, Fred Hughes	E. E.	Pine Grove
Stallsmith, Ruth Virginia ✓	English	Gettysburg
Stauffer, Harry Groff	Chemistry	Spring Grove
Swartz, Wilbur Hartman	Business	Gettysburg
Thrush, George Herbert, Jr.	E. E.	Shippensburg
Trumbore, Arthur Frederick	E. E.	Pennsburg
Way, Winston Burdette	I. E.	Bridgeport, Conn.
Weeks, Newton Spangler	Chemistry	Renovo
Wharton, Bruce Graham	Chemistry	Renovo
Wible, Mark Clyde	C. E.	Gettysburg
*Winebrenner, George Clare	Chemistry	Gettysburg
Wolf, John Henry	5	Westminster, Md.
Wolff, Robert Miller	Chemistry	Hanover
Yost, Carleton Henry	Chemistry	Coatesville
Zinn, Chester Allen	Economics	York

SOPHOMORE CLASS.

Class of 1925.

Candidates for the Degree of Bachelor of Arts.

Aungst, Spencer Wenrich	Philosophy	Harrisburg
Baker, Bertha Helen	French	Abbottstown
Balthaser, William Arthur	Political Science	Pine Grove

*Died Jan. 14, 1923.

Name	Major	Home
Baublitz, Earl Raymond	Philosophy	York
Bell, Martha King ✓	Latin	Gettysburg
Benedict, James Glenn	Political Science	Quincy
Borleis, Harry Frederick	Philosophy	Baltimore, Md.
Borleis, John Henry August	Philosophy	Baltimore, Md.
Bucher, Margaret Helen ✓	French	Biglerville
Curran, George Jacob	Greek	Felton
Diehl, Madeline Weaver ✓	History	Gettysburg
Dise, Helen Louise ✓	Mathematics	Sea Isle City, N. J.
Dougherty, Louise Cornelia ✓	French	Hazleton
Ehrhart, Kenneth Strine	Philosophy	Brodbeck's
Evans, Luther Weltmer	Philosophy	Annvile
Greenholt, Homer Reginald	Latin	Hanover
Handschumacher, Albert Wm.	Greek	Philadelphia
Hess, Walter Eugene	Education	Martinsburg
Hesse, Florence Catherine ✓	History	Smithsburg, Md.
Joseph, Loy Edward	Mathematics	York New Salem
Kerner, Carl William Frederick	Greek	Bayonne, N. J.
Klug, Carroll Sebastian	—	Baltimore, Md.
Kroh, Millard Leo	Philosophy	Glen Rock
Kuhns, Logan Luther	Philosophy	Apollo
McCullough, Sara Eileen ✓	English	Gettysburg
Melhorn, George Ira	Greek	Hanover
Menges, Elmer Lerew	Spanish	Bermudian
Miller, Mary Elizabeth ✓	English	Aspers
Moyer, Helen Amanda ✓	History	Palmerton
Peeling, Albert Stanley	History	York
Pegg, Harold Jay	History	Bloomsburg
Ports, Horace Gonder	History	Hanover
Rohrbaugh, Raymond Edgar	History	Glen Rock
Roth, Madylin Roberta ✓	History	Gettysburg
Schantz, Eva Burgetta ✓	Education	Schaefferstown
Scott, Ruth Katherine ✓	French	Bendersville
Sheads, Ruth Sara ✓	History	Gettysburg
Shimer, Frank Herbert	Greek	Schenectady, N. Y.
Stiles, Austin Edward	Greek	Dallastown
Trout, Paul Josiah	Philosophy	Pittsburgh
Walker, Paul Hartman	Philosophy	Lewisberry
Weaver, Thomas Erdman	History	Allentown
Zeigler, William Edward	Greek	York
Zimmerman, Minnie Ellen ✓	German	Punxsutawney

Candidates for the Degree of Bachelor of Science.

Name	Major	Home
Alitto, Santo	Chemistry	Harrisburg
Allison, Ethel Grace	History	Fairfield
Allison, Mary Margaret	French	Fairfield
Allshouse, William Kenneth	Chemistry	Greensburg
Alter, John Snyder	Chemistry	Connellsville
Althouse, Robert Girvin	Chemistry	Coatesville
Armor, Brady Sefton	Economics	Gettysburg
Armor, Horace Francis	Business	Gettysburg
Barbour, Lester Kenneth	Chemistry	Chambersburg
Barnes, John Luther	M. E.	Hagerstown, Md.
Basehore, Samuel Augustus	Business	Mechanicsburg
Beachem, Charles W.	Chemistry	Euclid
Berkey, Harry Law	M. E.	Marion Center
Bowman, Charles Edward	C. E.	Canton, Ohio
Boyles, Robert Clay	Chemistry	Piedmont, W. Va.
Bream, Walter Robert	C. E.	Gettysburg
Brenneman, William Joshua	M. E.	Huntingdon
Bringer, Ellsworth Hoover	Business	Harrisburg
Brown, John Benjamin	Political Science	Renovo
Burger, Keith	Economics	Gettysburg
Buzard, Charles Franklin	Education	Vandergrift
Cashman, William Wolf	Economics	New Oxford
Cribbs, Harry Milton	Business	Vandergrift
Crist, Homer William	Chemistry	York New Salem
Cump, Guy	Business	Gettysburg
Decker, Parke	C. E.	Nicholson
Doehne, George Vaughn	M. E.	Harrisburg
Doran, Russell Philip	Chemistry	Meriden, Conn.
Ely, Henry Nevins	—	Red Bank, N. J.
Emanuel, Edward Francis	Economics	Harrisburg
Feltz, Thomas	Chemistry	Wilmington, Del.
Fisher, Lee Reeser	Economics	Reading
Fleming, Ned McCamant	C. E.	Chambersburg
Fleming, Harry Willard	M. E.	Gettysburg
Frederick, Robert Irvine	E. E.	Carlisle
Fritz, William Dale	Chemistry	Meyersdale
Gantz, Frank Birdsall	Chemistry	Lancaster
Geisz, Henry Frederick	I. E.	Baltimore, Md.
Gentzler, Waldo Emerson	Mathematics	York
Gilbert, David McConaughy	Business	Camp Hill
Gingerich, Spurgeon Wilbert	Chemistry	York

Name	Major	Home
Gross, Clarence E.	C. E.	York
*Gumbert, John Milton	Economics	Berlin
Haberlen, Roy Calvin	Chemistry	Latrobe
Hafer, George Horace	Chemistry	Abbottstown
Hartman, John Edward	C. E.	Pittsburgh
Heindel, Clair Rohrbaugh	Business	Seven Valleys
Heller, Hobart Franklin	Physics	Berwick
Henneberger, Melvin Buck	M. E.	Waynesboro
Henry, Ted Robert	Business	Vandergrift
Hoffman, Wilbert Horner	Chemistry	Johnstown
Hunter, George William	Business	Gettysburg
Ibberson, Glenn Lowell	Business	Philipsburg
Jarboe, Joseph Clark	Biology	Gettysburg
Johnson, Carl Bennett	Chemistry	Jamestown, N. Y.
Kanda, Takeo	Biology	Wailuku, Hawaii
King, Charles Frederick	I. E.	Baltimore, Md.
Kitzmiller, William Ray	M. E.	Gettysburg
Klick, Marvin Wagner	Chemistry	Nazareth
Koontz, John George	Chemistry	Johnstown
Krieg, Daniel Bering	M. E.	Harrisburg
Lower, Donald Eppleman	Chemistry	Aspers
Markley, Franklin Henry	M. E.	York
McDaniel, Joseph Wilson	E. E.	Thurmont, Md.
McGoogan, William John	Biology	Farwell, Mich.
McPherson, Carrol Wright	Chemistry	Ashland
Metz, Edith Frederica ✓	English	Brookline, Mass.
Miles, Ronald Glenn	I. E.	Portage
Mitchell, James Mann	E. E.	Gettysburg
Moyer, Sarah Elizabeth ✓	History	Harrisburg
Musselman, John Henry	Business	Fairfield
Newell, Paul Mahood	—	Vandergrift
Overmiller, Clair Marcellus	Physics	Hanover
Peters, James Grayson	Economics	Gettysburg
Ray, William Stanley	Business	Harrisburg
Reeser, Frederick Harold	Business	Watsontown
Rehmeyer, Clyde Seaks	Business	Stewartstown
Rodgers, Charles Frederick	Chemistry	Johnstown
Ryall, Thomas Milton	History	Pittsburgh
Schneck, Slater Samuel	E. E.	Pine Grove
Schubauer, Robert George	C. E.	Harrisburg
Shader, Ralph Foster	Chemistry	Harrisburg
Sheets, Howard Franklin	Chemistry	Aspinwall

*Died Feb. 2, 1923.

Name	Major	Home
Shiple, John Thomas	Chemistry	Meyersdale
Slaughter, Frank Ellis	Chemistry	Tarentum
Smeltz, George Edwin	C. E.	Wiconisco
Smith, Wilmer Carl	Chemistry	York
Stup, Harry Cornelius	Chemistry	Harrisburg
Thompson, Kenneth Paul	English	Vandergrift
Tracey, Charles Omar	Chemistry	Blue Ridge Summit
Umberger, Ross Eugene	E. E.	Oakland, Md.
Weidner, Frederick Piersol	Chemistry	Reading
Williamson, Stephen Girard	Business	Lock Haven
Wink, Howard Lamar	E. E.	Manchester, Md.
Wren, George Granville	Business	Steelton
Wren, Kasper Donald	Economics	Steelton

FRESHMAN CLASS.

Class of 1926.

Candidates for the Degree of Bachelor of Arts.

Acevedo, Nestor	Political Science	Porto Rico
Agnew, Raymond Edward	—	East Lansdowne
Albig, Reed Harrison	—	McKeesport
Arnold, George William	—	York
Baker, Anne Gitt	—	Abbottstown
Baker, Ernest Wilson	—	Bakersville
Beck, Raymond Sylvester	—	York
Bence, Josephine Aileen	—	Marion Center
Berkebile, Dwight Melvin	Political Science	Johnstown
Byers, John Clarence	—	Littlestown
Claney, William Blair, Jr.	—	Blairsville
Coker, Elizabeth Hillyer ✓	Philosophy	Atlanta, Ga.
Coleman, Mary Catherine ✓	—	Hanover
Curfman, Frank Paul	—	Zullinger
Epley, Martha Elizabeth ✓	—	Gettysburg
Everard, Chauncey Hamilton	—	Wapwallopen
Feirich, Charles Edward	—	Steelton
Filbert, Frederic Quail	—	Auburn
Funk, Merle Russel	—	Boonsboro, Md.
Gladfelter, Millard Elwood	History	Seven Valleys
Gutmann, George Frederick	—	Baltimore, Md.
Haar, Ruth Irene ✓	—	New Oxford

Name	Major	Home
Hagen, Sigurd Borge	English	Gettysburg
Hartley, Ida Elizabeth ✓	Mathematics	Gettysburg
Hartman, Rodney Benton	—	Gettysburg
Hill, George James	—	Cumberland, Md.
Hoffman, Benjamin Franklin	—	Hagerstown, Md.
Hoffman, George Edward	—	Williamstown
Holliday, Thelma La Rue	History	Altoona
Kase, Charles Robert	—	Lewistown
Kauffman, Carl Leroy	History	Mifflintown
Keen, John Harold	—	Wiconisco
Keller, Paul Joseph	—	Oberlin
Kistler, Roscoe Gray	—	Garrett
Kitzmeyer, Edmund Leith	—	Brooklyn, N. Y.
Klase, Anna Dolores ✓	History	Ashland
Klingler, Charles David	—	Pittsburgh
Laatsch, Melvin Henry	—	East Point, Georgia
Lansberry, Arnold Glenn	—	Clearfield
Leber, Spurgeon Joseph	—	Jacobus
Manges, Daniel Edmund	—	Harrisburg
Martin, Elizabeth Amanda ✓	—	Mechanicsburg
Minick, Harold Blair	—	Waynesboro
Peters, Eleanor Myra ✓	French	Guernsey
Ramsay, Willis Elliott	—	York
Reed, John Earl	—	Oberlin
Rice, Russel Bradley	—	LeGore, Md.
Rindlaub, Katherine Gertrude ✓	English	McKnightstown
Schmitt, Elwood Frederick	—	Altoona
Schriver, Elizabeth	—	Gettysburg
Scott, John Robert, Jr.	—	Mt. Carmel
Seibel, Frederick Robert	Greek	Glen Rock
Sheaffer, Clair Stewart	—	Hanover
Shumaker, Warren Edward	—	York
Simons, Harold Jacob	—	Bridgeport, Conn.
Sloop, Ralph Conrad	—	Bloom, Va.
Smith, Henry Philip	—	Baltimore, Md.
Snyder, Helen Ethel ✓	French	New Oxford
Straley, Luther Samuel	English	Maytown
Taylor, Marion Isabella ✓	—	Gettysburg
Taylor, Margaret Mae ✓	—	Gettysburg
Thorstenberg, Homer Emmert	—	Jamestown, N. Y.
Troxell, Madeleine Odell ✓	—	Gettysburg
Ulsh, Leonard Beaver	—	Newport
Wachter, Edith May ✓	English	Gettysburg

Name	Major	Home
Wolf, Wilbur Charles	English	Johnstown
Zeiders, Esther Naomi	Mathematics	Gettysburg

Candidates for the Degree of Bachelor of Science.

Allen, Earl Walton	Business	Camden, N. J.
Anspach, Roy Alton	Business	Strausstown
Asbury, Norman Branley	Greenwood E. E.	Philadelphia
Bahnsen, Arthur Walter	M. E.	New Haven, Conn.
Bauder, Carlton Willard	Chemistry	Johnstown, N. Y.
Beachley, Merhle Vincent	Business	Middletown, Md.
Beisel, Earl Franklin	Chemistry	Reading
Beitler, Mildred Claire	—	Gettysburg
Benner, Paul Alonzo	C. E.	Frederick, Md.
Biddison, William Taylor	—	Frazer
Biddle, Paul William	Business	Hanover
Billheimer, Edward Charles	Chemistry	Reading
Bortner, Lynn Wilburn	E. E.	York
Brown, Theodore Edwin	Biology	Dilliner
Brown, William Kirk	—	Sharon
Brubaker, Dallas Edwyn	Mathematics	Altoona
Clawson, James Carlyle	C. E.	Indiana
Cless, Warren Leroy	M. E.	Harrisburg
Cowan, Jackson Davis, Jr.	Biology	McKeesport
Craun, Charles Lester	E. E.	Dover
Dale, Paul Lininger	M. E.	Emigsville
Darlington, Carrol Bernard	Chemistry	West Chester
Dickey, John Weller	Education	Somerset
Diehl, Daniel Lester	C. E.	Souderton
Donaldson, William Lawrence	Mathematics	Fairfield
Doyle, Raymond Edgar	I. E.	Portage
Dress, Norman Irvin	Chemistry	Pine Grove
Fahringer, Henry Herbert	Chemistry	Sunbury
Fauber, John Edward	Chemistry	Elizabethville
Fennimore, Roland Murray	C. E.	Fair Haven, N. J.
Ford, Raymond White	E. E.	East Orange, N. J.
Friant, Louis Joseph	Business	Johnstown
Fulweiler, Edward Demmy	—	Columbia
Galbraith, John Marion	M. E.	Bellwood
Garvin, Walter McCartney	C. E.	Williamsburg
Gerhart, Rodgers Oscar	C. E.	Waynesboro
Gilbert, Joseph Henry	E. E.	York
Hall, Marshall	E. E.	Pine Grove

Name	Major	Home
Hankey, Anna Leona	—	Gettysburg
Harter, Wilbur Allan	Business	Wapwallopen
Hartig, Martin Kaul	C. E.	Frostburg, Md.
Hartzell, Mildred Harriet	Business	Gettysburg
Hasenfuss, Gustav Charles, Jr.	Business	Philadelphia
Hassler, William Earl	Biology	York Springs
Hendley, Arthur	C. E.	Frostburg, Md.
Hesson, Vivienne Barbara	—	Arendtsville
Hollinger, William Guy	Business	Hanover
Horner, Daniel Meade	Chemistry	Oberlin
Hutchison, Philip Greenfield	Business	Kittanning
Johnson, Jay David	English	McKnightstown
Jones, David John	C. E.	Strong
Kerrigan, Timothy Robert	Chemistry	Rockwood
Kopp, Richard Euray	Business	York New Salem
Krissinger, Richard Heffley	Chemistry	Berlin
Kuhnert, Paul Curtis	Chemistry	E. McKeesport
Kurtz, George William	E. E.	Columbia
Landis, Charles Andrew, Jr.	Chemistry	Fairfield
Leach, Charles Franklin	M. E.	Lemoyne
Light, Ira Gernet	Chemistry	Palmyra
Long, Thomas Jackson, Jr.	—	Parsons, W. Va.
McLaughlin, Fred	Chemistry	Bloomsburg
Manifold, Stanley Shaffer	Chemistry	Palmyra
Martz, Roland Roscoe	C. E.	Berwick
Mathias, Alfred Lenhart	Business	Baltimore, Md.
Mellor, William Norris	M. E.	West Chester
Mensch, Walter Franklin	C. E.	Danville
Miller, John	Chemistry	Berwick
Miller, Walter Cedric	Biology	Meyersdale
Monteros, Antonis Espinosa	Business	Philadelphia
Nichols, John Franklin	Chemistry	Connellsville
Parry, Wesley Galloway	Chemistry	Scranton
Peduzzi, Carl Joseph	Business	Mount Union
Phillippy, Samuel Leslie	Business	Greencastle
Pilus, Alexander Anthony	—	Mt. Carmel
Plank, Wilbur Levi	E. E.	Gettysburg
Ream, Richard Coleman	Biology	Johnstown
Rebuck, Charles Lawrence	Biology	Harrisburg
Rhoads, Ralph George	Chemistry	Linglestown
Rice, Ralph William	Business	Cumberland, Md
Rinehart, Harold Samuel	Business	Mercersburg
Roth, Lulu Barbara	English	Gettysburg

Name	Major	Home
Runk, Roy Swartz	E. E.	York
Russell, Stuart Berryman	M. E.	Reisterstown, Md.
Ryder, Robert Huston	E. E.	Hagerstown, Md.
Sachs, Ruth Margaret	Mathematics	Gettysburg
Scharf, Henry Murray	—	Gettysburg
Shirk, Davilla Clark	Chemistry	Lebanon
Singley, Ray Clifford	C. E.	Mt. Carmel
Singley, William Samuel	C. E.	Hazleton
Sipe, Arthur Spangler	Business	York
Sparrow, Jacob Carver	Biology	Harrisburg
Sparrow, William Logan	Chemistry	Harrisburg
Sperry, John Marion	Business	Cumberland, Md.
Spessard, Howard Lehman	Business	Hagerstown, Md.
Stahl, John Albert	C. E.	Pine Grove
Sterrett, David Brown	E. E.	Lewistown
Stevens, William Humphrey	Bentley Business	Coatesville
Stine, Elliott Columbus	Business	Brunswick, Md.
Stouffer, Fred J.	Business	Huntingdon
Straley, Glenn Lee	C. E.	Lewisberry
Stutzman, Lloyd Leon	Chemistry	Valley View
Swartz, Clarence Leroy	Business	Gettysburg
Swauger, Raymond Lloyd	C. E.	Avonmore
Swope, James Glenn	Business	Fairfield
Tedrow, Frank Warren	Chemistry	Rockwood
Throne, James Russell	History	York
Toombs, John Bruce McGregor	I. E.	Meridan, Conn.
Wagenbach, Park Luther	Chemistry	Steelton
Wehn, Harry Earl	Business	Johnstown
Wetzel, Milo Marshal	Mathematics	Gettysburg

STUDENTS NOT CANDIDATES FOR A DEGREE.

Banks, John Anthony	Dunmore
Bentz, Michael John	Lebanon
Birely, Morris Franklin	Thurmont, Md.
Brenholtz, Walter Metzger	Williamsport
Burckart, Glenn Arthur	New Castle
Collett, Harry Downing	Altoona
Decker, Douglass Adron	Johnsonburg
De Vito, Michael Joseph	Hartford, Conn.
De Vito, Philomena Mary	Hartford, Conn.
Ellis, Leon Guy	Uniontown
Englehart, Charles Clayton	Accident, Md.

Name	Home
Englehart, Howard Melvin	Accident, Md.
Fisher, Luther Irvin	Waynesboro
Foster, William Abram	Mapleton
Golickman Louis	Ansonia, Conn.
Hamme, Roy Wilfred	Brodbeck's
Harmon, William Irvine	Pateron, N. J.
Hatch, Glenn Charles	Penn Yan, N. Y.
Heim, Claude Stephen	Orrtanna
Henry, Lucille	Gettysburg
Hereter, Mabelle	Gettysburg
Heissenbuttel, Ernest Gerhardt	Middletown, N. Y.
Hoenstine, Roland Luther	York
Horner, Margaret Donaldson	Gettysburg
Hunger, William Kingsley	Vandergrift
Iannantuoni, Adolph Joseph	Waterbury, Conn.
Johanson, Ernest Jerome	Oshkosh, Wis.
Johnston, William Earle	Freeport
Karnak, Charles Anderson	Johnstown
Keen, John Harold	Wiconisco
Lapp, Hollis Vernon	Malvern
Larsen, Bernhard Nathaniel	Penn Yan, N. Y.
Martin, Rudolph David	Nanticoke
McCardle, Ross Clayton	West Chester
McCauslin, Alfred Roy	Biglerville
Mellin, Carl Theodore	Philipsburg
Millard, Joseph Delcamp	Mt. Carmel
Millard, Oscar Benjamin	Mt. Carmel
Mordan, George	Bloomsburg
Myers, Elwood Swartz	New Oxford
Ostrom, John Ward	Middletown, N. Y.
Rascati, Ernest Joseph	New Haven, Conn.
Reichard, Jacob Mohr, Jr.	Lansdale
Romesberg, Earl Clinton	Rockwood
Rote, Harry Frederick	Harrisburg
Ryngawa, Peter Edward	Glen Lyon
Scattergood, Joseph	West Chester
Schaeffer, Charles Franklin	Allentown
Sipe, Edward Franklin	Waynesboro
Strine, Howard Hamilton	Gettysburg
Swab, Martin Cooper	Elizabethville
Tarbell, Theodore Hyde	Haddonfield, N. J.
Vanore, Alphonse Alfred	Brooklyn, N. Y.
Weiser, Donald Koehler	Gettysburg
Widing, Herbert Andrew	Philadelphia
Wolfe, George Dale	Indiana
Yoshida, Ichirohei	Echigo, Japan

STUDENTS IN THE ACADEMY.

SENIOR CLASS.

Asper, Maybelle	Aspers
Ayoob, Richard Saloom	Brooklyn, N. Y.
Barclay, Charles Frederick	Sinnamahoning
Bock, George Rudolph	Jersey City, N. J.
Bowers, Frederick Hunsberger	New York, N. Y.
Croasdale, Jack Finch	Meriden, Conn.
Esterly, Charles Alfred	Reading
Fichtner, Albon Russell	Conemaugh
Frantz, Aldes Alderfer	New Oxford
Garcia, Antonio Florez	Bogota, Columbia, S. A.
Gardner, William Henry Rex	Renovo
Gracey, Harry Fleming	Philadelphia
Granlun, Walter Sigwald	Philipsburg
Grim, Gisela Adele	Gettysburg
Hafer, Luther Seymour	Phillipsburg, N. J.
Hand, James Joseph	
Heck, Ward Stauffer	Harmans, Md.
Heckey, Albert Rossville	Palmer, Alaska
Heinze, Edward Philip	Raspeburg, Md.
Kocis, John Andrew	Windber
Mensch, Carence Saul	Auburn
Meyer, John Henry	Jersey City, N. J.
Mullen, Randolph Jerome	Philadelphia
Nuss, Hamilton Anton	Harrisburg
Peters, Julia Eliza	Gettysburg
Pyle, Ralph F.	Somerset
Robinson, Martha Jane	Gettysburg
Simons, Edwin	Bridgeport, Conn.
Simons, Joseph Leon	Bridgeport, Conn.
Sloop, Roy Luther	Bloom, Va.
Solliday, Benjamin Hubert	Charmian
Tambakis, Byron Peter	Athens, Greece
Taylor, Darrell Theodore	Tupper Lake, N. Y.
Walter, Wilbur Tayman	Rockwood
White Dallas Wayne	Orrstown
Wood, Robert Winthrop	Washington, D. C.
Zimmerman, John Philip	Cumberland, Md.

UPPER MIDDLE CLASS.

Acebo, Luis	Manzanillo, Cuba.
Ankeney, Reginald Spickler	Clear Spring, Md.
Baker, Ira Young	Gettysburg
Bollinger, Harvey Gable	New Oxford
Brant, George Berkey	Friedens
Clutz, Paul Alexander	Gettysburg
Coates, David Kersey	Collingswood, N. J.

Coberth, Morris Edward
 Conrad, John Ohlin
 Dean, John William
 Delap, John Milton
 Dietz, Richard Hauser
 Duttera, Joseph William
 Elrick, Howard Newton
 Faber, Albert Russel
 Fortunato, Stanley Michael
 Fortunato, Leonard Henry
 Fox, William Ernest
 Fry, John Wilmer
 Haas, Anton Frederick
 Hamilton, John Clark
 Hartman, Anna
 Hendrickson, Harry Logue
 Kanasut, Dien
 Kerchner, James Harold
 Kistler, Sydney McClintock
 Lashley, Lynn Cash
 Martinez, Enrique
 Mease, Ralph Ellsworth
 Meyer, Stanley Clinton
 Oritz, William
 Scott, Clyde Alexander
 Simon, Sidney Paul
 Skelton, Jesse Fred
 Snively, Isaac Newton
 Stallsmith, Katherine Gertrude
 Sterner, Ivan Lagrahn
 Tenney, Edward Monroe, Jr.
 Vaughn, Anna Elizabeth
 Wada, Masaichi
 Walmsley, Harry Louis
 Wehler, Wilbur Philemon
 Wood, Paul Douglas
 Young, Richard Benton

Baltimore, Md.
 Myersdale
 Conemaugh
 Gettysburg
 Hellam
 New Oxford
 Vandergrift
 Philadelphia
 Pittsburg
 Pittsburg
 Lansdonf
 Newville
 Baltimore, Md.
 Smethport
 Gettysburg,
 Harrisburg
 Bangkok, Siam
 Wilkinsburg
 Johnstown
 Cumberland, Md.
 Mexico City, Mexico
 Pine Grove
 Pittsburgh
 Chiclayo, Peru
 Brackenridge
 Bridgeport, Conn.
 Harrisburg
 Cynwyd
 Gettysburg
 Gettysburg
 Hagerstown, Md.
 Gettysburg
 Yokohama, Japan
 Pittsburgh
 Gettysburg
 Washington, D. C.
 Johnstown

LOWER MIDDLE CLASS.

Alberts, Robert Carmen
 Batzler, Fred Paul
 Burrows, Tremaine Kellogg, Jr.
 Daniels, George Lamar
 Durst, Richard Leonard
 Edmunds, Frank Alister
 Fey, Vernon Jacob Martin
 Fichtner, Harold Ellsworth
 Fox, Herman Christian, Jr.
 Heck, William Nathaniel
 Hershey, Henry Shellenberger
 Hoffman, Harry Donald
 Jones, James Atwell
 Lind, John Philip, Jr.

Pittsburgh
 Baltimore, Md.
 Takoma Park, D. C.
 McConnellsburg
 Philadelphia
 Cynwyd
 Hazleton
 Conemaugh
 Philadelphia
 Harmans, Md.
 Lancaster
 Johnstown
 Tye River, Va.
 St. Petersburg, Fla.

Musselman, Margaret Elizabeth
 Ott, Paul Parry
 Phillips, Birch Beddall
 Potter, Harry Bradley
 Sorensen, Roy William
 Stallsmith, Sara Elizabeth
 Sutterey, William Shippa
 Suzuki, Kinsabure
 Trauger, Chester H.
 Yaley, Eugene Frank
 Yingst, Arbour Logan
 Zeiders, William Jay
 Zerbe, Paul Allen

Gettysburg
 Portland
 Williamsport
 Karthaus
 Brooklyn, N. Y.
 Gettysburg
 Narbeth
 Toyotama, Japan
 Bedminster
 Vandergrift
 Harrisburg
 Gettysburg
 Pine Grove

JUNIOR CLASS.

Andrews, Frank Jackson
 Bast, Benjamin Edwin
 Carbaugh, Carroll
 Feldman, Milton
 Hartman, Jane
 Heckel, Harry Laird
 Johnston, Thomas Paul
 Jones, John Bradford
 Lawrence, Lorenzo Carlyle
 O'Brien, William Crampton
 Sloop, Harry Holland
 Steuart, Francis Irvin
 Stow, Audley Kant
 Straw, Philip Werden
 Waldman, Allen Clay
 Wetzler, William Peter
 Wilson, Roland Shelly

York Springs
 Philadelphia
 Cashtown
 Philadelphia
 Gettysburg
 Pittsburgh
 Claysburg
 Washington, D. C.
 Roanoke, Va.
 Wilmington, Del.
 Bloom, Va.
 Lancaster
 Caldwell, N. J.
 Kingston
 Baltimore, Md.
 Pittsburgh
 Scranton

SUB-JUNIOR CLASS.

Clark, Walter Denny
 Hammond, Franklin Moore
 Huber, Charles Henry, Jr.
 Ilger, George Marshall
 John, Henrie Edgar
 Jones, Amos Wormley

Bradford
 Philadelphia
 Gettysburg
 Narberth
 Baltimore, Md.
 Washington, D. C.

SUMMARY.

Number of Students in College 1922-23.

Graduate Students	40
Seniors	78
Juniors	90
Sophomores	140
Freshmen	176
Not candidates for a degree	57
Collegiate Department	581
Academy	131
	<hr/>
	712

COMMENCEMENT 1922.

Salutatory.

Ruth Anna Spangler

Commencement Orator.

Major General Merritte Weber Ireland.....Washington, D. C.

Valedictory.

Milton Valentine Burgess

GRADUATES.

Bachelor of Arts.

Matilda Joanne Anderson :
Hazel Kathryn Bartow ✓
Philip Bower
Frank James Dimpsey
John Wilfred Doub
Norwood Shipley Floto
Paul Levi Foulk
Arthur Alphus Fuhrman
David Etter Small Gotwald
Walter Dimm Guss
Irwin Apple Horne
George Harold Keck
Paul Edward King
Paul Ezra Lawyer
Hubert Miller Linn

Ralph Hayden Medsger
Walter Louis Mertz
William Gordon Minich
Carl Robert Nagele
Rueil Keedy Greitzner Rice
William Herman Saas
Howard Melvin Saylor
Ruth Anna Spangler
Miriam Daisy Taylor
Fred Brice Wall
Constance Cornelia Weaver ✓
Roscoe Edwin Wertman
Pierce Main Willard
Ruth Sheely Wolf

Bachelor of Science.

Michael Daniel Baker	John Henry McDonnell
John Brenneman	John Alexander McGaughy
Milton Valentine Burgess	Elsie Mumma ✓
Frank Luther Daugherty	Paul Francis Olinger
Donald Glen Davis	Howard Andrew Overmiller
Warren Andrew Dollman	Robert Monroe Oyler
Jennings Mason Gentzler	David Edward Panebaker
Paul Steck Gilbert	Edwin Larue Pegg
Lester Earl Gingerich	Louis Smith Reller
Frank Bushey Hege	Carl Letsig Ruder
Henry McClellan Hersh	Donald Everett Rudisill
Jacob Roed Jensen	Charles Franklin Ryder
Leon Paul Keiser	Russell Luther Sahn
William Albert Krebs	Roger Barrick Smith
James William Kyle, Jr.	George Frederick Waltz
John Peter Leavy	Leonard Ray Weaver
James Allan MacInnes	Leroy Hartzel Winebrenner
Robert Burns Mathias	Edgar Leroy Wolfe
Henry Ellsworth McBride	

ADVANCED DEGREES.**Master of Arts.**

John William Albig	McKeesport, Pa.
Minerva Taughinbaugh Baker	Confluence, Pa.
Ross Eldon Bowers	Cortland, N. Y.
Edward Lee Holman	Blain, Pa.
John Roy Lovell	Gettysburg, Pa.
Harman Frederick Miller	Somerset, Pa.
George Israel Myers	Seven Valleys, Pa.
Joseph D. Renninger	Harrisburg, Pa.
Stella Barton Shumaker	Gettysburg, Pa.

Master of Science.

William Anton Buedinger	Jersey City, N. J.
Foster Ellis Klingaman	Gettysburg, Pa.
John Allen Sheffer	Spring Grove, Pa.

HONORS AND PRIZES.**GENERAL FINAL HONORS.**

Milton Valentine Burgess

Ruth Anna Spangler

HIGHEST CLASS HONORS.**Senior.**

Milton Valentine Burgess

Junior.

Wilmer Kohl Trauger

Sophomore.

Ernest Frederick Grothe

CLASS HONORS.**Seniors.**

Ralph Hayden Medsger

Ruth Anna Spangler

Junior.

Charles Harold Howard
Charles Glenwood Hughes
Herbert Wertz Meckley

Earl George Ports
Charles Allen Sloat
Calvin Lee Zerbe

Sophomore.

Harry Ludwig Carlson
John Jacob Clutz
Herman Franklin Gohn
Emma Hermine Grimm
Amy Rosetta Haar
Eva Cornelia Haar

Christian Max Hanson
Harry Fries Mickel
Grace Lillian Moyer
Bradford Torrey Schantz
George Wellington Smith
Harry Groff Stauffer

Freshman.

Anna Mary Bream
Homer Reginald Greenholt
George Horace Hafer

Helen Amanda Moyer
Ruth Sara Sheads

GARVER LATIN PRIZE.

Anna Mary Bream
Louise Cornelia Dougherty

Mary Elizabeth Milier
Ruth Sara Sheads

BREWER PRIZE IN GREEK.

Paul Edward King
With honorable mention of
Edward Isaac Morecraft

GARVER PRIZE IN GREEK.

Homer Reginald Greenholt
With honorable mention of
Paul Josiah Trout

GRAEFF PRIZE IN ENGLISH.

Paul Ezra Lawyer
With honorable mention of
Paul Levi Foulk
Paul Steck Gilbert

BAUM MATHEMATICAL PRIZE.

Carl Wallace Munshower
Ernest Frederick Grothe
With honorable mention of
John Jacob Clutz
Leon Altmiller Phillips

KUHNS HISTORY PRIZE.

Walter Louis Mertz
With honorable mention of
Fred Brice Wall
Frank Bushey Hege

MUHLENBERG FRESHMAN PRIZE.

Homer Reginald Greenholt

NIXON R. O. T. C. PRIZE.

Walter Ginder McAlister

LONG R. O. T. C. PRIZE.

Donald Glen Davis

OLIVER R. O. T. C. PRIZE.

Horace Eugene Yost

HONORARY DEGREES.**CONFERRED AT COMMENCEMENT 1922.****Doctor of Divinity.**

Rev. Arthur N. Bean Paterson, N. J.
 Rev. David T. Koser Arendtsville, Pa.
 Rev. James A. McAllister Porto Rico.
 Rev. Albert O. Mullen Spring Grove, Pa.

Doctor of Laws.

Pres. John A. W. Haas, D.D. Allentown, Pa.
 Maj. Gen. Merritte W. Ireland Washington, D.C.
 Rev. George U. Wenner, D.D., L.H.D. New York, N. Y.

Doctor of Science.

Prof. William S. Hall, C.E., E.M. Easton, Pa.

INDEX.

	Page.		Page.
Absences, Rules Governing	104	Business Administration	39
Academy, Gettysburg	139	Bureau of Appointments	137
Accounting, Course in	59, 64	Business Law	65
Admission:		Business Management	66
Rules Governing	21		
Requirements for	22	Calculus	75
Advanced Standing	25	Calendar	2, 3
Admission Subjects in Detail .	23	Chapel Services	103
Advanced Standing, Admission to	25	Church Services	103
Advanced Degrees, 1922	163	Class Honors	109
Advisers	26, 102	Classical Course	35
Aid for Students	113	Class Memorials	132
Algebra	75, 76	Class Rating	29
Alumni Associations	137	Chemistry:	
American Government and Politics	67	Courses of Instruction	71
Anatomy	68	Chemical Laboratory	125, 130
Anglo-Saxon	46	Christian Evidences	54
Argumentation and Debating ...	46	Civil Engineering Courses ..	41, 84
Astronomy	79	College Dormitory Rooms	118
Astronomical Observatory	130	College Fees and Tuition	116
Athletics, General Statement ...	135	Commencement, 1922	162
Athletic Council, Members	19	Committees:	
Athletic Field	132	Of Board of Trustees	8
Attendance, Rules	104	Of the Faculty	17
		Conditions and Deficiencies	106
Banking, Course in Money and ..	65	Constitutional Law	67
Bateman Scholarship	114	Contracts and Specifications ...	85
Baum Mathematical Prize	110	Cottage Hall	129
Bell Lectureship	79	Council, Athletic, List of Members	19
Bequest, Form of	137	Council, Student	102
Bible: Courses in English Bible .	54	List of Members, 1922-1923 ..	19
Biblical Literature	54	Courses of Instruction	45
New Testament Study	55	Courses, Summer School	100
Bills, Tuition and Fees	116	Curriculum	26
Biology:			
Courses of Instruction	68	Deficiencies, Rules Governing ...	106
Biological Laboratory	125	In Admission	23
Board of Trustees:		Degrees	26
List of Members and Officers .	7	Degree, Master's	44
Standing Committees	8	Degrees Conferred in 1922:	
Boarding Clubs	117	Bachelor's	162
Brua Chapel	130	Honorary	166
Buildings	128	Master's	163
Buildings and Rooms, Gettysburg		Department Honors	109
Academy	139	Descriptive Geometry	82
Bureau of Appointments	137	Deutscher Verein	48

	Page.		Page.
Dormitory Buildings	128	Geography	24
Rooms, Rent, Charges, etc ...	121	Geology	73
Dupont Scholarship	114	German:	
Economics	64	Courses of Instruction	46
Education, Courses in	59, 100	Gettysburg Academy	139
Elective Subjects for Admission .	24	Gettysburg, Location of	6
Electric Lights in Dormitories ..	122	Glatfelter Hall	129
Electrical Engineering		Grades, Method of Designation	
Courses	40, 88	.....	27, 107
Electricity, Courses in	77, 88	Graduates, List, 1922	162
Electrical Machinery	89	Graduation, Requirements for	
Electives	31	.....	30, 39, 43
Elinore Taylor Brewer Greek		Graeff Prize	110
Prize	111	Greek:	
Embryology	69	Courses of Instruction	48
Employees, List of Offices and ..	14	Elementary Courses	48
Employment for Students	114	Greek Prizes	111
Engineering:		Gymnasium:	
Courses	40, 82	Equipment	130
General Statement	81	Hassler Latin Prize	110
Civil Engineering	81, 84	Health and Sanitation	70
Industrial Engineering	84	Heat Power Engineering	87
Mechanical Engineering	86	Highways, Course in	86
Electrical Engineering	88	Histology	69
Engineering Equipment	126	Historical Sketch of the College .	4
Engineering Fees	117	History:	
Engineering Library	90	Courses of Instruction	55
English Bible Courses	54	Roman Constitutional History	52
English, Courses of Instruction .	45	History of Philosophy	56
Admission	22, 23	History of Education	59
English Literature	45	Honorary Degrees Conferred '22	166
English History	56	Honors, Rules Governing	
Entrance Requirements:		Award of	109
General Statement	22	Honors and Prizes, List, 1922 ..	164
Subjects in Detail	23	Hydraulics	83
Equipment of the College	124	Hygiene, Personal	70
Ethics	57	Industrial Engineering	43, 84
Evening Courses for Teachers ..	63	Inspection Trips for Engineers ..	90
Evidences of Christianity	54	International Law	67
Examinations, Rules	106	Instructors	9
Expenses; Estimated for one yr.	117	Kappa Phi Kappa	64
*In Gettysburg Academy	141	Kinematics	87
Extension Courses for Teachers .	59	Kirschner Scholarships	113
Faculty: List of Members	9	Kuhns History Prize	111
Committees	17	Laboratories: Equipment	125
Fees, Tuition and Expenses	116	Fees	116
Gettysburg Academy	141	Labor Problems	65
Finance, Corporation	66		
French:			
Courses of Instruction	52		
General Information	102		

	Page.		Page.
Latin:		Oratorical Contents	134
Courses of Instruction	49	Organic Chemistry	72
Admission Requirements . 24,	31	Outline of Courses	29-43
Lectures	51, 52		
Law: International	67	Pennsylvania Hall	128
Business Law	65	Phi Beta Kappa	112
Constitutional Law	67	Philosophy Courses	56
Roman Law	52	Physical Culture	70, 106
Lecture Course, College	80	Physical Laboratory	125
Lectureships	79	Physics:	
Library: General Statement	124	Courses of Instruction	77
Of Literary Societies	124	Admission Requirements	77
Of Engineering	90	Physiology, Anatomy and ..	68, 70
Linguistic Science	47	Political History of Europe	55
Literary Societies	134	Political Science Courses	67
Logic	57	Power Plant Design	88
Lyceum Course	80	Pre-medical Course	35
MacFarlane, James, Fund	124	Prescribed Subjects for Admission	
Machine Design	87	.....	22, 31
Majors and Minors	29	Presidents of the College	
Masonry	85	1832-1923	5
Master's Degree:		Prizes: General Statement	110
Requirements	44	List of Awards 1922	164
Material Equipment of College ..	124	Probation	108
Materials Testing	83	Property of Students	123
Mathematical Physics	78	Psychology	56, 59, 60
Mathematical Prize	110	Publications	135
Mathematics:		Prescribed Work	31
Courses of Instruction	73	Reading Room	125
Admission Requirements . 24,	74	Records, Grades, etc.	27, 106
McKnight Hall	128	Re-examinations	106
Mechanical Engineering		Registration	22
Courses	40, 86	Reinstatement	109
Mechanical Drawing Course	82	Religion, Philosophy of	58
Mechanics	83	Religions, History of	55
Memorials of Classes	132	Report of Student's Record	27
Military Science and Tactics:		Requirements for Admission	22
General Statement	91	Requirements for Graduation ...	30
Courses of Instruction	92	Roman History	52
Mineralogy	73	Roman Law	52
Modern Language Requirements .	31	Roman Constitutional History ..	52
Money and Banking, Course in ..	65	Rooms: Assignment	119
Muhlenberg Freshman Prize	110	Rental Rates	120
Museum	128	R. O. T. C.	91
Musical Organizations	135		
New Testament Study in Greek .	49	Samuel Garver Greek Prize	111
Nixon Athletic Field	132	Samuel Garver Latin Prize	111
Officers, Lists:		Sanitation	70
Board of Trustees	7	Schedule and Enrollment	27
Faculty	9	Scholarships and Aid for	
Student Council	19	Students	113
Alumni Association	137	Semester Hour Defined	26

	Page.		Page.
Seminaries:		Summary of Students	161
Biological	65	Summer School	99
Education	61	Surveying	84
Physics	79		
Sewerage	86	Teachers: Note on Preparation	
Shopwork	86	for Teaching	137
Society, Engineering ..	86, 88, 89	Teachers' Course	37
Sociology	57	Technical Courses	39, 40
Spanish Courses	53	Terms and Vacations	103
State Certificate	63	Thaddeus Stevens Hall	129
Statics and Dynamics	83	Treasurer's Bills	115
Structural Design and Drafting ..	85	Trigonometry	74
Stuckenberg Lecturship in		Trustees, Board of	7, 8
Sociology	79	Tuition and Fees, College	116
Students:		Gettysburg Academy	142
List, College 1922-23	143	Unit Defined	23
List, Gettysburg Academy ...	158	Vacations	103
Student Council	102	Water Supply Engineering	86
List of Members, 1922-23	19	Weidensall Y. M. C. A.	131
Students' Interests	134	Y. M. C. A.	131, 134
Student Property	123	Zoölogy, Courses	68
Student Publications	125		
Students Not Candidates for			
a Degree	21		
Subjects for Admission	23		







